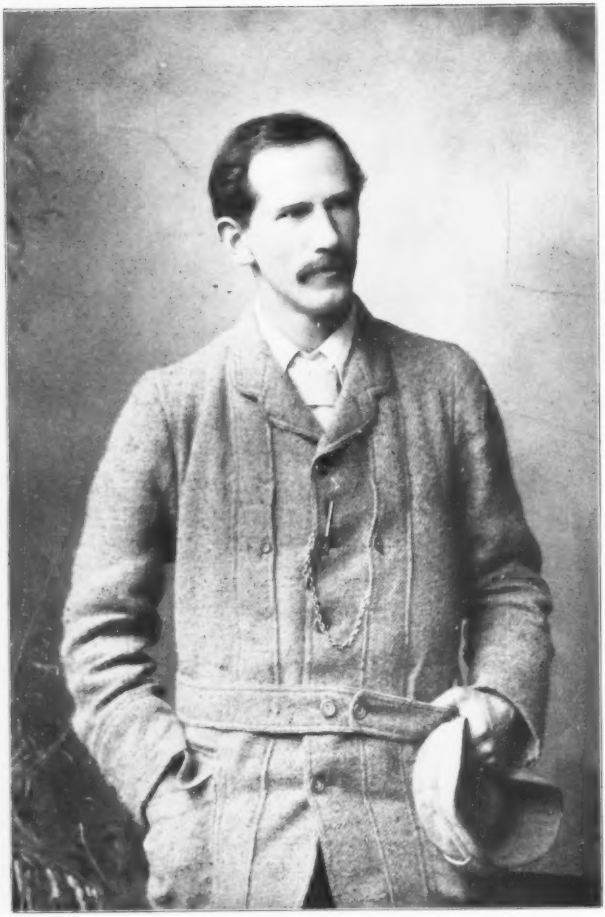

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THE SCHOOL AT ABBOTSHOLME, CONDUCTED BY DR. CECIL REDDIE[1]

PATRICK GEDDES
Edinburgh

I

INTRODUCTION

While personally of Scottish, London, and foreign education, I may claim to be in some respects all the more alive to the qualities of the English public-school and university systems, although, as is inevitable under such circumstances, also awake to their defects.

I have hence long been interested in Dr. Reddie's labors to create a school which, while retaining the admitted virtues of English education, should yet meet the requirements of the modern world in a more adequate way. I have felt substantial agreement with his vigorous criticisms of the educational world, and admiration for his no less fearless initiative; and I have often regretted that, here as so often, the prophet should still have too little honor in his own country. For many years I have directed foreign educationalists to Abbotsholme as the most active and progressive of English schools. One especially, M. Demolins, has made it the text of a well-known volume.[2]

[1] This article is an extract from a report on the school prepared by Professor Geddes. It is based upon a personal inspection of the school made July 11–18, 1904.— EDITORS.

[2] M. Demolins, *Anglo-Saxon Superiority* (from the French eighth edition), London, 1901.

Many independent visitors—French, German, American, etc.—have also from time to time communicated their impressions to the larger world, with comparisons strongly in favor of Abbotsholme, and these on many grounds. Better than criticism, however, the school has afforded an educational type, upon which, whether with generous acknowledgement or with insufficient recognition, new schools have been founded, alike on the continent and at home. Even in the present month I find in an important French review[3] an article by the director of the school of Liancourt, himself an English public-school boy and teacher of varied experience; and he, while an active rival and critic of M. Demolins, goes almost farther in his eulogy of Abbotsholme, and in the severity of his criticisms of the older type of school,[4] to which it is the arduous honor of Abbotsholme to furnish an example and lead.

Though thus interested in Abbotsholme since its foundation, indeed its very inception, I had unfortunately never found time to visit it; it was therefore with much interest that I accepted the invitation of the headmaster and trustees to undertake an inspection and report last July. To this inspection I devoted the whole of one week's residence, with some preparation beforehand, and considerable reflection since my visit.

Even if space permitted, I need not here enter into any detailed account of the organization of the school, especially as this is already clearly stated in its founder's writings and in the descriptions of previous visitors. While thus visiting the school with an open mind, sympathetic indeed to all its main aspects, I have been more especially prepared by my own work and studies to inquire into two matters in particular: (1) the Abbotsholme endeavors toward that better-organized associated life which is too much neglected in our Scottish education; and (2) the experimental working-out of a modernized curriculum, with adequate correlation and succession of studies — geographic and historic; scientific, linguistic, and literary; practical and artistic;

[3] Scott, "L'éducation nouvelle," *Revue politique et parlementaire*, August, 1904.

[4] R. F. Cholmeley, "A Complaint of Public Schools," *Independent Review*, September, 1904, will also be found worth consulting.

in brief, naturalistic and humanistic. Both of these endeavors have, of course, to be judged, not merely by the traditional standards of the universities, but by their adaptation to practical life and social usefulness.

Thus, while I have visited the school prepared by an understanding of its general aims, it has also been in acceptance of a frankly expressed invitation to search out and unsparingly to criticise any weak spots in the ambitious program of the school or in the execution of it, and with the understanding that the more definite my criticisms and suggestions, the better for all concerned.

The following report, then, while warmly appreciative of many elements in the school, though with sharp criticisms of others, may risk conveying misunderstanding to some, especially strangers to it, since in analyzing the character of a school, as of a person, points of blame may to many seem to outweigh larger elements of praise. It is, however, I am convinced, the wish of the headmaster and the council, of the parents, the old boys, and other friends of the school, that every possible improvement should be made; and my desire is to be of service toward this.

I can most easily give my impressions of Abbotsholme by writing, in direct narrative form, a summary of my diary during my week's stay. Before my arrival a week had been devoted mainly to written examinations, and this had prepared stacks of papers for my perusal. Then haymaking had come, a welcome change of occupation for the boys, and giving also the masters time to look over the examination work.

I arrived on a Monday evening. Field work was in full activity. Never before had I seen a hay-field cleared with such order and rapid progress, yet all without the supervision of masters or the help of a farm laborer, the only exception being that the farm baliff himself was working with one of the boys upon the rick — the spot where the elder's skill was still needed to guard against the risks arising from inexperience.

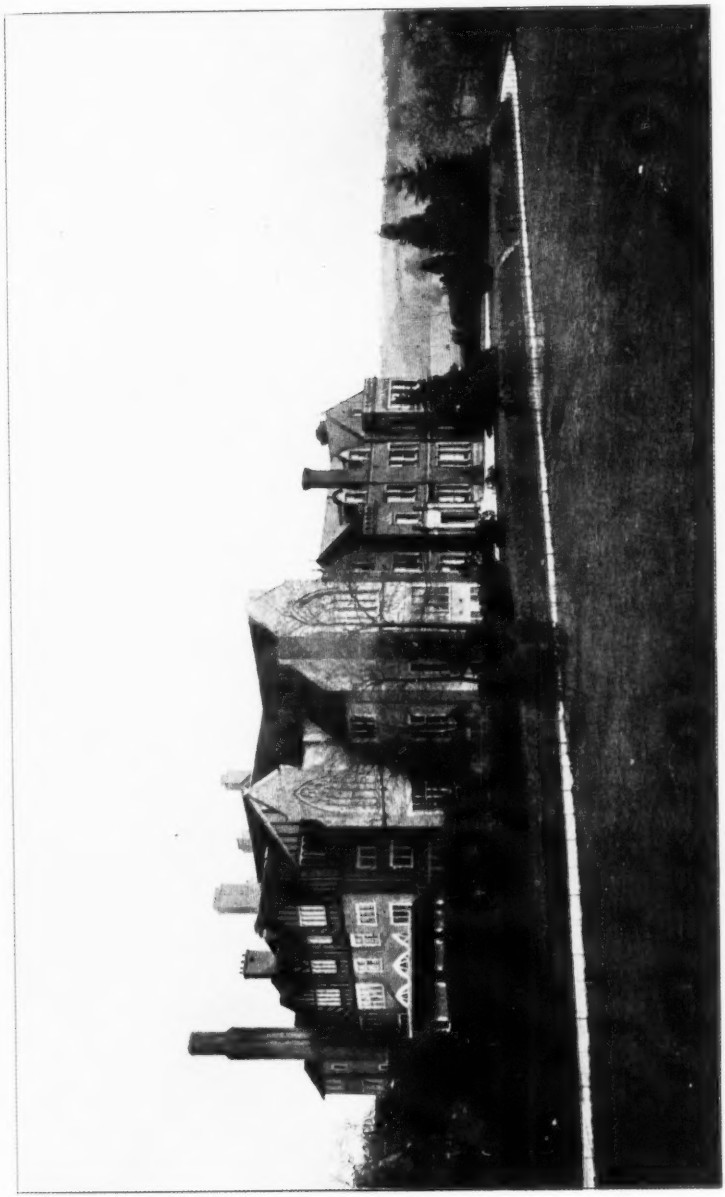
The whole field was under the command of the "captain of haymaking," a senior boy, who had six squads, each under a corporal, one managing the cart, the rest loading or raking. The

swiftness and order, the economy of labor, the cleanness of the field, all showed not only good organization, but thorough good-will.

After a couple of hours of this came the call to bathing, and in a twinkling the glowing workers were in the river. Here a fresh bit of organization appeared. Another boy-officer was on the bridge above the bathing-place conducting the "swimming tests." Every boy not disqualified by health is expected to go through a regular course, graduated from the simplest swimming, within depth and for short distances, to the difficult task of rescue work. That particular evening the diving tests were being passed, and, as an old examiner, I could not but admire the boy examiner at his work, passing or rejecting, usually with instant decision, yet wherever doubt arose giving a second, and in one case a third, chance.

A hearty and wholesome supper, well served in a spacious and dignified refectory hall, followed, and then a brief choral service, with well-chosen reading, in the stately though simple school chapel. From such an evening one could not but gather a favorable impression of this little community, vigorous in work and play, with its atmosphere at once of discipline and of culture.

Next morning, after chapel and breakfast, I was conducted by one of the senior boys over the school buildings old and new. We began with the magnificent "new block," of which the chapel and dining-hall furnish the main architectural features, but including also extensive kitchen and domestic accommodation in the two lower floors, with well-arranged dormitories, guest-chambers and sickrooms above, and at the top a skilfully isolated floor for infectious cases. Thence we passed to the old buildings, in which the larger rooms are used as classrooms and dormitories. The extensive outbuildings are utilized as workshops and laboratories, etc. As it was the annual haymaking time, the classrooms were empty, and field work was in full progress till bathing and dinner time. So unconventional a departure from ordinary school traditions as this of holidays for work instead of for merely play, no doubt helped to explain the vigor and steadiness of work which struck me during my visit. It showed that the school is guarding against



THE NEW SCHOOL AT ABBOTSHOLME

the too common mistake of expecting simultaneous efforts of mental and bodily exertion from growing boys, and is doing this by the sensible method of giving each of these culminating functions of the school year, examinations and haymaking, their proper turn. This raises the whole question of the school time-tables, both for day, week, term, and even year; but to these I shall return.

After dinner came another characteristic and admirable feature of the school life; the boys trooped up to the chapel for ten or twenty minutes' quiet, while someone, master or boy, gave a musical recital, which happened today to be one of the masterpieces of Wagner. In this way evidently two good habits — one bodily, the other mental — were being formed at one and the same time: (1) the simple physiological habit of quietly beginning digestion before resuming activity; and (2) on the side of culture was being acquired a wide acquaintance with classical music. The perfect quietness of the boys at this time, as also at other similar times, as, e. g., just before and during chapel — and this as much before any master came in as after — struck me as a strong bit of fresh evidence that the too common noise in schools is largely the expression of imperfectly exercised activities, and as a striking proof that the teacher who has found normal outlet for these activities will not fail to get all the silence and attention he may require. Quiet was further insured by allowing the few boys of little or no musical ability or interest to read quietly, either their "term-book" or some other, and by letting one or two who might have been only a disturbing element find some less uncongenial outlet elsewhere.

In the afternoon the school split up into cricketers and haymakers, the former to practice for a Saturday match; the latter to pursue hard yet happy work of their own, which protected them from the worthless habit of mere looking on and loafing, which has latterly made our games, however excellent for the few who actually play, so doubtful a blessing to the many who merely look on.

In the evening came one of the great functions of the Abbotsholme school year — the "Harvest Home Festival." This again

was simply and excellently managed. The "last load" was taken up the hill to the hay barn on its summit, in full procession, led by all the available music of the school — drums and fifes, bugles and violins, a simple yet admirable picture, a true pendant to Mason's "Harvest Home" — that most perfect of all our idylls of rustic English life. Nor was a deeper note wanting. Just before the procession started a bonfire of weeds was kindled — symbolically recalling the lesson read that morning in chapel, the Parable of the Tares.

After the load had been stacked, the boys gave a concert in the chapel, which, pending the erection of the future School Hall and Theater, has at present to be used as a big school for all such functions. Here solo singer and instrumentalist, school choir and orchestra, all took their appropriate part, and appeared, as far as I could judge, to advantage. I regret that from deficiencies of my own early years I am not able to express any opinion upon the musical technique; but I could at any rate appreciate the spirit of the whole performance, and note with satisfaction that the non-musical boys were few, almost every one taking part in orchestra or in choir.

Next came an ample and joyous harvest-home supper, followed by toasts, in which the haymakers and their captain, the head and his outside guests, were all included. After this came the harvest-home service in the chapel, with appropriately chosen psalms and hymns, prayers and lessons, all with brief personal application to work and life. Afterward, in a long and interesting talk, the headmaster set forth to me more fully his deeply meditated and constantly applied ideas of the moral and educative uses of productive labor, and of the correlation of occupations and studies with art and literature, with music and morals — in short, of living out day by day the unification of religion and of life.

The evening ended in storm, the wind and rain, lightning and thunder, emphasizing impressively, for boys and elders alike, the day's lesson and symbol: "Work while it is day."

Next morning I divided between the reading of batches of examination papers and the study of the administrative details of

the school, which are being gradually worked out in a series of sheets, well, indeed artistically, printed at the school press. As personally disposed in my own work to reduce formal regulation to a minimum, I must confess to having approached these elaborate regulations in a critical, indeed a skeptical, spirit. But I must also frankly admit that the more closely I studied these regulations, the more I saw in them. Beginning always with direct orders, simply expressed and easily obeyed, even by the youngest, they display the gradual development of a well-organized and well-administered scheme of action, so that the perfect order and discipline at haymaking or at swimming, which I had observed, was here set forth with corresponding clearness; in fact, not only summed up as custom, but codified as law. Indeed, I came to recognize this to be one of the carefully considered ways in which this school is organized to prepare its boys for intelligent action and citizenship in the larger world without; and my first dread of over-regulation was abated when I saw that the rules were, as far as possible, not an external code, devised in the abstract by the headmaster and imposed by his authority upon the boys, but a summary and codification of their own and their masters' practical experience; a body of laws, which practice and reflection, through successive years, had actually modified, and were still modifying. The school code thus becomes an introduction to the best aspects of law and order in the larger world, as well as to the modes of altering laws constitutionally open to an intelligent and orderly democracy. Though approaching this, as I have confessed, at first rather reluctantly, I came increasingly to recognize its educative value.

A very notable feature of these school regulations is that, as far as possible, each definite set of rules is prefaced by a well-summarized exposition of its higher aspects. Thus, in the case of haymaking, while two sheets were devoted to strictly agricultural matters, so as to satisfy the farmer, a third sheet was devoted to the larger educational aspect of the subject, showing the place of the hay harvest among the labors and festivals of the year. An outline was appended of ancient and modern views of the seasons, astronomic and historic, literary and poetic, thus

transcending the practical outlook to take in a long perspective of liberal culture. On inquiry of the boys, as well as of the masters, I satisfied myself that these rules and explanations had been of real interest and service, and were regarded by them as having greatly aided in the admirable function of the previous day, and this in all its aspects, economic and artistic, literary and ethical.

In this way I reached my first appreciation of the school, as successfully progressing toward reuniting two sides of life at present too much divided, and too exclusively assigned to the so-called laboring class and the so-called cultured class respectively. It is from lack — say rather the loss — of this union in our present education that the rustic is left rude, and the scholar left bookish; here plainly was growing up a healthier type than either, because correcting the respective defects by the corresponding qualities of both.

Similarly in other regulations, e. g., those for bathing, for "dormitory parade" (i. e., bed-making, teeth-cleaning, and so forth), for cabinets, etc. The simplest physical pleasure of bath or bathe, nay, even the humblest offices of the body, are thus not only made healthily habitual, but educative in the fullest sense, each being understood progressively from the standpoints of cleanliness and health, of intellectual clearness, of social and moral organization and responsibility.

Those sets of rules which apply at all times are framed and fixed in their appropriate places. Others, such as the bathing rules, after the appropriate season is over, are wisely withdrawn from view to reappear afresh another year. Thus no one can plead ignorance of either the law or its associated doctrine; and there is no doubt that in this way administration becomes not only more easy and effective, but obedience becomes willing and punishment rare.

On the whole, then, despite some minor reserve as to details here and there, which it is quite possible fuller experience might remove, I must confess to having been converted, and this in some measure against my will, to an appreciative and even approving recognition of this highly developed plan of school organization.

The same day I began visiting the lessons given by the differ-

ent masters. Beginning with the head, I heard a lesson in chemical theory vividly and clearly given. Thence I passed to a study of the outdoor occupations of afternoon school, to which much importance has always been attached at Abbotsholme from the first. Here the master in charge rapidly sent off various squads of boys to work. One large detachment, duly captained, went to clear a pasture of thistles. A small group was told off to attend to the bee-farm; some, to separate honey from the comb; others, to paint a wax-box; and so on. One or two boys had to repair and paint the canoes, while a small batch of youngsters went to their own little gardens. A larger number of juniors remained in the workshop, their work for that hour being to repair the hay-rakes, which, having naturally lost or broken teeth during the harvesting, had of course to be repaired before being laid aside for next season.

I visited the workshop on other days also, and can speak of all I saw in it, of its management and teaching, with eulogium. The work was at once useful and practical, requiring a reasonable measure of skill in both the handiwork and the working drawings, with clearness of head in both. The personal teaching, Socratic and sympathetic, I could not but admire.

At 4 o'clock, the two hours' afternoon school being over, the boys were free for games till 6. As I had examined the buildings the day before, I now went with a fresh boy guide over the whole school estate, when I was struck, on the one hand, by the very fortunate situation of the property, and, on the other hand, as befits such an excellent environment, by the healthy atmosphere and tone of the community itself. But, to assure myself that I had not got into the hands of exceptionally distinguished or specially selected boys, I joined, so far as time allowed, in games and bathing, and so came to make a good many individual acquaintances, as well as to know most by name and sight. The same evening, at evening chapel, the rustic spirit of the preceding day's labor was not lost sight of, Gray's "Elegy" being chosen as the lesson, which was read with sympathy and heard with attention.

After these two days of general inspection, I naturally devoted the rest of my week to a more detailed scrutiny of the teaching.

For this purpose I not only read all the examination papers, but was present at lessons by each of the masters in all the various classes. I also looked through a very large number of boys' note-books, so as to form an idea of the work of the three terms of the current school year.

Leaving, at present, matters of instruction to the more systematic portion of my report, I may conclude this narrative by noting for special commendation in the afternoon school the open-air sketching classes and the drill. A small detail, but one characteristic of the practical resourcefulness which this school life appears to me peculiarly to develop, I may mention. I noticed that a youngster who had been marching badly was ordered to "fall out and join the small boys," who, some distance off, were being drilled by one of themselves. The youngster in disgrace fell out, looking crestfallen enough. But I was amused, on passing that way a few minutes after, to see that, to hide his own discomfiture, he had taken over the command of the little squad and was drilling it himself!

During my visit I had opportunities for conversation with each of the masters, and especially with the head. With the latter I went over both old and recent buildings, and visited the gardens old and new. I also examined the proposed plans for further extensions, and discussed, as fully as time allowed, the various aspects and needs of the school and its curriculum.

On the Sunday evening I was present in chapel at the headmaster's weekly sermon to the boys, and was again very favorably impressed by the frankness, directness, and intellectual suggestiveness of his teaching, its moral and social value, and therefore strength of influence, and this especially for senior, or at any rate thoughtful, boys. At both week-ends I had been struck by the number of old boys who were revisiting the school, and by the warmth and loyalty of their feelings alike to the place and to its head. Not being unacquainted with the progress and with the difficulties of the school since its foundation, I was gratified to have these best of all assurances, not only of its enduring vitality, but of its accumulating strength. The "Old Boys' Club" will

here doubtless serve as a valuable influence, and that increasingly.

To the question of health I paid much attention. Especially notable is the medical organization, which accompanies that minute and thorough organization of hygiene for which the daily school life and the new buildings are so carefully planned. Skilled medical aid is a mile or so away, but first aid of every kind is provided in a well-kept waiting-room and surgery, in which all accidents and ailments have to be regularly reported, and in which all the needful dressings and simple remedies can at once be found, slight cuts and bruises furnishing, of course, the staple cases. Under these circumstances the saying that "nobody is ill at Abbotsholme" seems almost to have passed into a school proverb; and I learned that during fifteen years no serious epidemics have occurred, excepting two outbreaks of measles, each at the beginning of term, and due to the sending of a boy already suffering from the disease. In the only case of dangerous illness (one of appendicitis) prompt treatment was successful.

As an example of the readiness and self-reliance of the young "medical officers" (a prefect, with his understudy, who will be in charge next term), I noted during my stay with interest that a cut deeper than usual had been promptly sewn, with due antiseptic precautions, by the boy-surgeon on duty, without calling in the doctor at all, or even referring the matter, as the rule advises, to the headmaster.

Looking into statistics, I noted that, while the medical diary for the school year now closing included nearly two hundred medical units (that is, visits per boy per day), the slightness of the ailments (mostly cuts, chilblains, colds, etc.) was evidenced by the fact that the total bills from doctor and druggist put together amounted to only about 25*s.*! Of the advantage of the "stitch in time" I can imagine no better evidence.

Next, looking closely at the boys one by one in the classroom or field, I could distinguish only two who showed any physical defect. One boy was evidently suffering from eye-strain; but his spectacles, I found, had only just been broken. The other had overcrowded teeth. As the school rules require the boys to

visit dentist and oculist during vacation, any neglect in these matters is due to the parents rather than to the schoolmaster.

Searching more and more closely after the explanation of this notable health and vigor of the boys, I explored the kitchen department, and inquired into the dietary. The food was not only ample and well-cooked, carefully chosen and varied, but skilfully and gracefully served also. The wholesome porridge and milk of the North, the substantial joints of English tradition, and the fruits and salads of the German table were all amply represented; I noticed, in fact — what I should have thought well-nigh impossible to boy nature — that the supply of strawberries at more than one table had been so generous as to outrun the demand. Rich and tasteful decoration gave the final touch of beauty to the spacious and well-lit dining-hall. The regrouping of the boys at the various tables for the three chief meals, so that the same do not sit together, but enjoy daily opportunities of conversation with a succession of boys, as well as masters, ladies, and guests, is again one of those many details in which Abbotsholme improves upon the too fixed monastic or barrack-like tradition of older schools, both in this country and abroad.

The school costume, too, shows the same attention to what is healthy and practical, convenient and becoming; again a notable escape from the archaic or conventional fashions so common in the school world.

Comprehensive and minute attention to hygiene is expressed throughout the buildings, and especially, of course, in the "new wing." Having myself been largely occupied in the building, or transforming, of large houses to be residences for Edinburgh students — a responsibility closely analogous to that incurred in building a public school — I must not only express a general approval of the success of Abbotsholme in these matters, but the warmest particular appreciation of the skill and ingenuity of the plans, whereby attention has been given to every detail of health and sanitation, to every precaution against epidemics and against fire. I have before me two notable recent deliverances of the highest medical authority: (1) Dr. Hutchinson's recent appeal

for the teaching of Hygiene in schools, and (2) the important report of Dr. Leslie Mackenzie on the "Health of Schools," prepared for the present Scottish Royal Commission on this subject, and I have pleasure in bearing witness that each writer may find his requirements more fully met at Abbotsholme than anywhere else I know of.

[*To be concluded*]

CHRISTMAS AT THE UNIVERSITY ELEMENTARY SCHOOL

MRS. FRANK HUGH MONTGOMERY
Secretary of the Parents' Association of the School of Education

For many weeks before December 22, when the Christmas festivities were held at the School of Education, the spirit of the day had been growing in the thought and work of the children. The presents for the fathers and mothers were treasured as delightful secrets, and were the objects of much careful, patient, loving work. The thought of giving and sharing did not stop with the home, but reached out in playing Santa Claus to the children at the Home of the Friendless through the bright scrapbooks made by the kindergarten children, to individual families of the destitute, to children's clubs at two of the settlements, and in other ways. Thus the little people were all ready for Christmas Day at the school, and eager to have the parents come and join in the good time.

A most fitting introduction was the morning exercises, to which guests could not be invited on account of lack of room. The earnestness and feeling which the children showed in the singing of the Christmas songs, the attention with which they listened to the reading by Miss Fleming of the first Christmas, and to Mr. Jackman's simple talk about the Christmas message of good-will, which belonged to each and which each could bestow, evinced that the preparation had been a real and a beautiful one. The program in detail was as follows:

Song, "Ye Shepherds, Arise!".....*Carl Reinecke*
Scripture Reading.....*Miss Fleming*

1. Prophecies:

> "How beautiful upon the mountains are the feet of Him that bringeth good tidings, that publisheth peace; that bringeth good tidings of good, that publisheth salvation; that saith unto Zion, Thy God reigneth!"

"For unto us a child is born, for unto us a son is given: and the government shall be upon his shoulder: and his name shall be called Wonderful, Counselor, The Mighty God, the Everlasting Father, the Prince of Peace," etc.

2. The Magnificat } .....St. Luke
   The Nativity }
3. The Three Wise Men.....St. Matthew

Christmas sentence, "Glory to God in the Highest".....*Crosby-Adams*
"Why Do Bells for Christmas Ring?".....*F. W. Root*
Address, "The Christmas Message".....*Mr. Jackman*
"Now He Who Knows Old Christmas".....

From these exercises the children went either to their respective graderooms or to the German play, as the room was not large enough to accommodate all at the same time. Twice the room was thronged with children and guests to see the German play. One of the boys gave a little outline of the play as it had been arranged by the class, and when the screens were withdrawn, the audience murmured a hearty approval of the perfect little forest presented to their gaze. A little glade in the midst of the fir trees weighed down by the new-fallen snow gave space for the players, and the gnomes seemed to appear as if by magic. It was a scene of great simplicity and effectiveness.

DIE TANNENFEE

(Ein Weihnachtsspiel)

PERSONEN

LIESE, GRETEL, MARIE — drei Bauernkinder.
KNARRE, KREISEL, WALDTEUFEL — Kobolde.
RUPRECHT — ein Waldgeist.
DIE TANNENFEE.

Scene: Ein dunkler Tannenwald. Die Erde ist mit Schnee bedeckt.

(Drei Mädchen kommen. Ein Mädchen trägt einen Korb mit Aepfeln. Sie suchen einen Weg.)

LIESE: Ich weiss nicht, wo wir sind, Marie. Da ist wieder der alte Tannenbaum.

MARIE: Ich glaube, da sitzt wieder der alte Kobold hinter dem Baum. Nein, er ist fort.

GRETEL: Nein, da ist der Kobold wieder; ich habe ihn gesehen

LIESE: Kommt, lasst uns fort gehen; mir ist bange.

MARIE: Ja, lasst uns eilen; es ist so dunkel hier.

GRETEL: Lauft, lauft! Ich sehe wieder einen Kobold.

(Die Mädchen gehen schnell fort, Drei Kobolde springen auf die Bühne. Dann kommt Ruprecht.)

KREISEL: Herum, herum, immer im Kreise herum! Wo sind die Mädchen?

KNARRE: Knarr, knarr, wo sind die Kinder?

WALDTEUFEL: Brumm, brumm, wo sind sie?

KREISEL: Heisa, heisa, dideldumdei! Ich suche die Mädchen; sie sollen das Weihnachts fest nicht feiern.

KNARRE: Heute ist Weihnachten und das ist ärgerlich für einen Kobold. Ich will die Kinder necken und erschrecken.

WALDTEUFEL: Ich will brummen, tief und laut, dass sie sich fürchten.

ALLE DREI: Heissa, holla, kommt, lasst uns gehen.

(Ruprecht kommt mit einem Besen.)

RUPRECHT: Recht so, recht so, meine lieben kleinen Waldgesellen! Führt die Kinder in die Irre. Kreisel, hüpfe und tanze! Knarre, schnurre und knarre! Teuflein, schnarre und brumme! Die Kinder sind dort auf dem Weg. Folgt mir, wir wollen sie erschrecken, damit sie den Weg nach Hause nicht finden.

(Die Gnomen gehen ab. Man hört die Kobolde lärmen und die Kinder schreien.)

LIESE: Lauft, lauft! Die Kobolde holen uns ein.

GRETEL: Hört, wie sie brummen und schrei'n.

MARIE: Und die Nacht ist so dunkel; es ist kein Stern am Himmel.

RUPRECHT *(zu Liese)*: Halt, nicht weiter!

KREISEL *(zu Gretel)*: Steh still, du dummes Ding!

KNARRE *(zu Marie)*: Du musst hier bleiben.

(Die Kobolde und Ruprecht schliessen einen Kreis um die Kinder.)

KOBOLDE: Kommt, lasst uns tanzen!

LIESE: Fort mit euch, ihr Kobolde!

RUPRECHT: Still! Willst du meinen Besen fühlen?

MARIE: Was sollen wir tun?

LIESE: Wir wollen beten. *(Die Kinder knien nieder.)* Ach, lieber Gott im Himmel, hilf uns armen Kindern!

(Die Kobolde verschwinden.)

LIESE: O Gretel, die Kobolde sind weg.

MARIE: Wo, sind sie geblieben?

GRETEL: Gott hat uns geholfen. Aber ich kann nicht mehr gehen, ich bin zu müde.

MARIE: Und der Kopf tut mir weh. Lasst uns hier bleiben bis morgen früh.

LIESE: Aber Vater und Mutter wissen nicht, wo wir sind, und wir haben doch die Aepfel für das kranke Brüderchen.

GRETEL: Ach, Liese, die Aepfel duften so süss.

MARIE: Lass mich die Aepfel nur einmal sehen.

(Liese öffnet den Korb.)

LIESE: Ja, schau nur, wie rosig sie sind.

MARIE: Sieh, was für schöne rote Backen dieser Aepfel hat.

GRETEL: O, und dieser, wie gut er schmecken würde.

LIESE: Aber wir dürfen doch die Aepfel nicht essen. Ich will den Korb zumachen.

GRETEL: Aber einen Aepfel können wir doch essen, nur einen.

MARIE: Ach, ja, Liese, einen Aepfel nur. Reich mir den Korb, bitte!

GRETEL: Beiss' einmal in diesen Aepfel, Liese!

LIESE: Nein, Gretel, ich will mein Versprechen nicht brechen.

MARIE: Und ich auch nicht. Wirf den Aepfel in den Korb, Gretel!

GRETEL: Aber mich hungert so.

LIESE: Kommt, lasst uns ein Wiehnachtslied singen; das wird den Hunger vertreiben.

DIE KINDER *(singen)*: "Stille Nacht, heilige Nacht."

(Sie schlafen ein.)

TANNENFEE: Schlaft ohne Sorgen; die Tannenfee wird euch beschützen.

LIESE: Was sehe ich?

GRETEL: Wovon träume ich?

MARIE: Wer bist du?

TANNENFEE: Ich bin die Tannenfee. Der immergrüne

Tannenwald ist meine Wohnung. Ich bin hier, wenn der Kuckuck ruft und die Sonne lacht, wenn der tiefe Schnee auf den Bäumen liegt und im Mondenschein glitzert.

(Sie verschwindet. Die Kobolde kommen.)

RUPRECHT: Schämt euch, ihr dummen Kobolde! Ein Kinderwort hat euch fortgetrieben.

KREISEL: Ha, ha, ha, du bist schnell genug mitgelaufen.

KNARRE: Heissa, da liegen die Kinder.

WALDTEUFEL: Kommt, wir wollen sie necken.

KREISEL: Ich will sie am Armel zupfen.

KNARRE: Ich will sie an den Haaren ziehen.

WALDTEUFEL: Und ich will ihnen die Aepfel fortnehmen. Komm' Ruprecht, tu' auch mit.

RUPRECHT: Ich weiss nicht, wie mir zu Mute ist. Die Kinder schlafen so schön, ich kann sie nicht necken.

(Die Tannenfee kommt.)

KOBOLDE: O weh, o weh, die Tannenfee!

KINDER: Die Tannenfee!

TANNENFEE: Ja, ich bin die Tannenfee, und ich will euch helfen, denn ihr seid brave Kinder. Aber euch Kobolde will ich bestrafen; ihr sollt jetzt alle stumm sein.

TANNENFEE: Du, Kreisel, sollst jetzt immer für Kinder springen. Du, Knarre, sollst jetzt immer für Kinder knarren. Du, Waldteufel, sollst jetzt immer für Kinder brummen. Du aber, Ruprecht, du hast ein gutes Herz, du sollst Christkindleins Knecht werden. Du sollst den Kindern zu Weihnachten Spielzeug und Aepfel bringen, wenn sie brav sind, aber du bringst ihnen die Rute, wenn sie unartig sind. Jetzt geh' in den Wald und suche den schönsten Tannenbaum, welchen du finden kannst. Komm', Ruprecht, mach' schnell! Hol' den Sack da, Ruprecht! Lass die Kinder hinein sehen.

LIESE: O, die wunderschöne Puppe!

GRETEL: O, der grosse Ball!

MARIE: O die vielen, vielen Kuchen!

TANNENFEE: Gieb' jedem Kind ein Spielzeug.

KINDER: Danke, danke sehr, lieber Ruprecht!

TANNENFEE: Nun, schmücke den Baum, Ruprecht, und

dann bring' die Kinder nach Hause. Ihr aber, Kinder, singt mir ein Weihnachtslied.

KINDER *(singen)*: "O Tannenbaum." *(Die Tannenfee verschwindet.)*

RUPRECHT: Kommt, Kinder, wir gehen nach Hause.

KINDER: Wir gehen nach Hause, nach Hause!

During the middle of the forenoon there were four combinations of groups. The French carolers visited each in turn. The first and eighth grades met in the kindergarten room, the little tots having had their celebration the day before. Games were played in which the big children showed a nice spirit and a sympathetic feeling toward their young partners. The first grade gave a dramatized version of "The Night Before Christmas." There were the father, the mother, and three children, the reindeer with fierce horns on their foreheads, and a fat little Santa Claus who could not reach the stockings, as they hung in front of the high chimney. The eighth grade contributed these two original verses:

CHRISTMAS

Christmas time is coming,
  When all the world is gay;
Christmas bells are ringing,
  And Santa's on his way.

Stockings full of presents,
  Hanging, bulging out.
All the world is pleasant
  When Santa's round about.

Lovely Christmas evergreens,
  Decked with sparkles bright;
Little Christmas angels,
  And candles flickering light.

Now the presents given;
  Santa goes away,
Wishing to the children
  A merry Christmas Day.

The air is clear,
And Christmas is here,
  And the cold north wind is blowing.
Holly wreaths green
In the windows are seen;
  In the house the Christmas tree's glowing.

Church bells are ringing,
And children are singing,
  Chanting their songs of praise.
Hurrah for old Christmas
And the good things it brings us!
  Hurrah for the holidays!

Santa is here
With his swift reindeer
  And a pack full of beautiful toys.
Down the chimney he comes,
With dolls and with drums
  For good little girls and boys.

The second, fourth, and sixth grades had a happy time with games, songs, and a piano selection by one of the children. The story of St. Christopher was told, and refreshments were served, the cookies having been made from flour ground by the children themselves.

The third grade and one division of the seventh began their festivities with a German song—"Kling, Glöcklein, kling," by Reinecke. The older children recited Christmas poetry. The group was visited by the French carolers and English waites. They went to the German play together and returned. The third grade recited "The Night Before Christmas." One of the seventh-grade boys, in the guise of Father Christmas, distributed stockings filled with candy, salted peanuts, and popcorn. The younger children had made the stockings and prepared the peanuts and the popcorn, whereas the candy represented the work of the seventh-grade children.

The meeting of the fifth and seventh grades was an exchange of gifts. The fifth had candy which they had made for their seventh-grade friends and the seventh had presents for the fifth. Songs were sung, but the chief entertainment was the reading by one of the college students of "The Ruggles' Christmas Dinner," from the *Bird's Christmas Carol.*

To the eighth grade belonged the yule-log festivities, which will be described later.

But the march of the French carolers must be followed as they passed from group to group. One of the children first gave the following account of *noël* in France:

NOËL

In France, especially on the south, Christmas is a more religious festival than with us. It is the time of almsgiving, but the chief gift season with the French is New Year's Day. Many of the beautiful old-fashioned customs still existing in the south have died away in the north and in cities under the influence of commerce and foreign peoples.

The ceremonies connected with Christmas have always been filled with joy, and this gaiety finds expression in ways more or less unique. The people have always sung carols, songs in genuine patois, or even the older Low Latin, which possesses remarkable simplicity and naïveté. The formal poetic value of these carols is almost nothing; they are as rustic as the peasants who are supposed to sing them.

In the south, particularly, the festival of Christmas is a time of some quite special manifestations which recall singularly certain pagan customs. On Christmas eve the festival is opened by a great supper. The table is set before the fire, where burns, crowned with laurels, an old yule-log, dried and kept with affectionate care for this triple solemnity of the Christmas-tide. Just before seating themselves at the table, the family makes an offering to the fire—a habit that savors of old-time idolatry. Only the sweet innocence of a very young child is considered worthy to utter the prayer and present the offering to the fire. The youngest child, therefore, kneels before the hearth, now for the

time an altar, and prays, following the mother's words, that the fire will warm well during the long winter the tender feet of all young orphans and weak old people; that it will send its light and heat into all poor garrets; that it will not devour the laborer's thatch nor the boat which rocks the sailor on distant seas. Then he pours upon the fire a libation of cooked wine as a symbol of life and health; and the old olive trunk answers with joyous cracklings and hissings, and sends its fumes out into the eager air like messengers of the *spirit of good-will to all men.*

At this moment a bell is heard outside, announcing our Lady of the Christmas. She enters, clad and veiled in white, and accompanied by carolers who sing a joyous canticle of the season. The guests are asked to share in the feast, especially in the Christmas cake, which has received the cook's very best care and which has the place of honor in the feast. The guests then pass on to other homes, and after the supper is over, the family gathers once more around the fire. There they sing carols till midnight, when they all go to the church to hear early mass.

During the whole of this night the poor are allowed to beg publicly, while chanting their carols. From the windows the children throw alms to them in little bags, which are set ablaze at one end, that they may be seen when they fall. They are like falling stars of heaven.

As the pupil finished, a woman in a bright peasant costume was seen seated by the fireside. Her child knelt beside her and repeated the Christmas prayer for all the orphaned and fatherless, for the aged and infirm, for all in peril by land or sea, and begged for them the Christmas blessing. Music was heard without.

The door was opened. First entered the Christmas spirit — a little child clad in white and veiled. Next marched, as in older times, three who represented Europe, Asia, and Africa, in costumes which the children considered appropriate. In gorgeous yellow, with golden miters, came the high prelates of the church; for the church must be first. These garments were the children's hand-work. Then followed the shepherds; and next came the peasants, bearing candles and joining in the procession. The

À BETHLÉEM

À Beth - lé - em, quand en - fant vint à na - ître, Quoi-qu'il fît
nuit, Le ciel é - tait bril-lant Comme en plein
jour, Et l'on vit ap - pa - raî - tre Un as - tre é - blouis
sant, Qui con - dui - sait les ma - ges d'o - ri - ent.

guests were treated to the Christmas cake, which had been most carefully prepared. They joined in a hymn about the hearthstone, and passed on their way to gladden and receive from other homes.

ENTRE LE BŒUF ET L'ÂNE GRIS

En - tre le boe - uf ` et l'ane gris Dort, dort
le pe - tit fils. Mille an - ges di - vi - ns, Mille sé - ra - phins,
Volent à l'en-tour De ce Dieu d'amour, De ce Dieu d'a - mour.

All the morning the hand-work done by the pupils throughout the quarter was on exhibition in the art, textile, and lunch-rooms. It presented a great variety and showed the individual tastes of the children. Of course, much of it centered about the Christmas work, as gifts for the parents. The kindergarten had as a group made thirteen scrapbooks and a number of colored clay-balls,

and individually had made napkin-rings, tea-rests, penwipers, match-scratchers, blotters with calendars pasted on, and scrap-books of madonna pictures. The older children made these last two in larger sizes, and the average number of articles made by the younger pupils was four; of the older, six.

The work of the children beyond the kindergarten, was even more varied. The clay-modeling was of necessity confined to two grades for the autumn quarter. These were the third and the fourth. They made jars, candlesticks, pin-trays, bowls, tiles, vases, statues, inkstands, dishes, collar-button trays, match-boxes, a Dutch shoe, and a squirrel. Each child chose his coloring, and in short did all the work except the actual firing. The results of their labors were good in form and color, and often a thing of beauty as well as utility. The ingenuities of the third-grade children, however, were not confined to clay. They found expression in more than creditable articles, such as portfolios, handkerchief holders, a chair picture-frame, ash-tray, needle- and spool-holder, needle-case, paper- and envelope-holders, and hat- and hairpin-holders, all of which testified to a close connection between the school and the home in the thought of the child. The work which the fourth-grade children did in wood showed that they loved their work and found it an interesting and adequate mode of expression. The polished fern-stands of hard wood, and many another piece fashioned with loving care, bore evidence of good work on the part of both pupil and teacher.

With the fifth grade a more pronounced difference between the tastes of boys and girls appeared, for some reason or other, although there were overlappings which would eliminate any hard and fast lines. A doll's chair and bed were in close proximity to an electric switch and a bread-board. Handbags of linen with decorations of original designs, turn-over collars, and center-pieces, were testimonials to the neat sewing of the girls. A pin-tray and a table stood in antithesis, both good. Fern- and music-stands, book-racks, waste-baskets, ink-stands, blotters, paper-knives, footstools, picture-frame, and card-trays again betokened individuality.

Difference in material was a feature of the sixth-grade

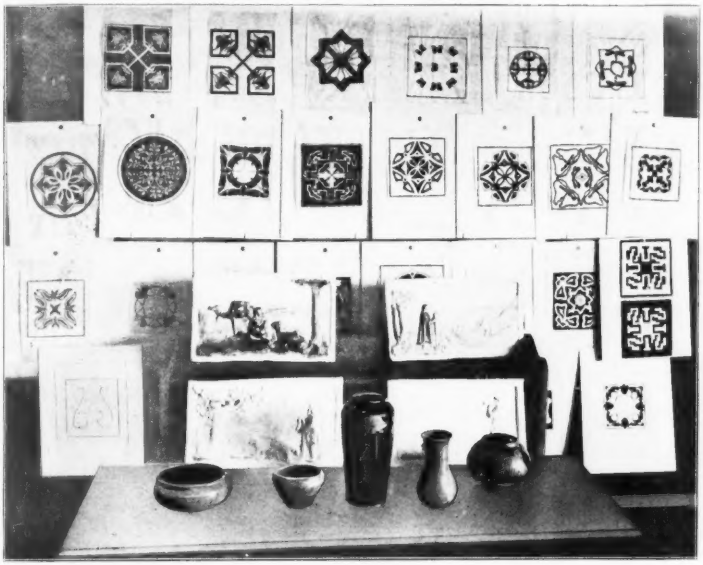


FIG. 1.— Work in Pottery and Plaster and Designs in Color. College and Elementary School.

FIG. 2.— Clay and Wood Work. College and Elementary School.

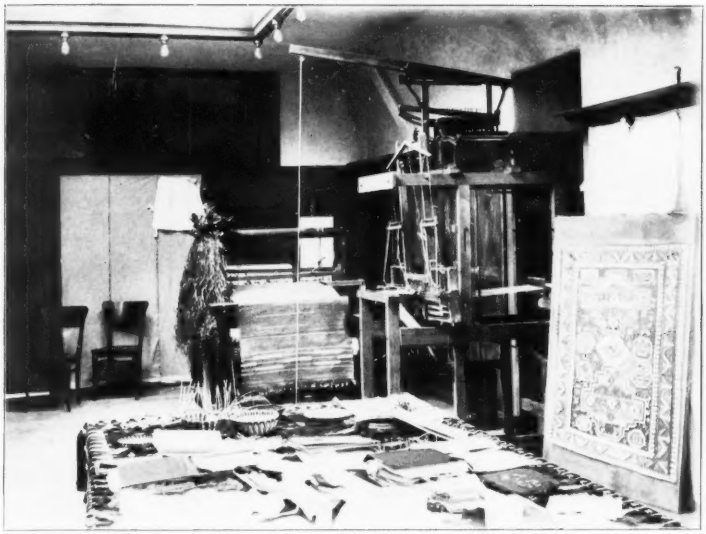


FIG. 3.— Work in Textiles. College and Elementary School.

FIG 4.— Work in Design and in Wood. Elementary School.

manual training: articles in gum wood, mahogany, pine, and oak, on the one hand, and linen and leather table and tabouret covers, lamp mats, doilies, and centerpieces, on the other. As small a thing as a penholder, and as large a one as a window-box, received the same care. An oak plank for fish and a rocking-chair vied with each other in homelikeness, while many of the articles enumerated in the other grades had a showing.

With the seventh grade the work naturally showed more skill and ability. The girls tried their hands at sewing aprons and lace-trimmed handkerchiefs, pin-cushions, and bags. There were the same articles in wood, while a tea-table, letter-box, and stamp-box lent additional variety.

In the portion devoted to the eighth grade the sewing on aprons, underclothes, bags, and scarfs stood in even stronger contrast to the tables, picture-frames, stools, inkstands, pen-trays, and plate- and bookracks of the sloyd-room.

It is impossible to enumerate all the hand-work of the exhibit. The accompanying illustrations will give a fair idea of portions of it. The work was certainly very creditable, and the results of the advantages of hand-training self-evident. The most skeptical critic of this phase of modern elementary education would have been quite converted.

The concluding festivities of the day were in the hands of the eighth grade. Throughout the building they had spread the Christmas decorations, with emphasis on the entrance hall. Down the corridors, from east to west, toward this point came groups, resplendent in color, all who had worn costumes in the various exercises of the day — French peasants, German children, the high prelates of the church of the Middle Ages, and the gnomes of the forest. They, together with many guests, gathered about the hearthstone. Then up rose a lad who cried:

> England was merry England when
> Old Christmas brought his sports again.
> 'Twas Christmas broached the mightiest ale;
> 'Twas Christmas told the merriest tale.
> A Christmas carol oft could cheer
> The poor man's heart through half the year.
> On Christmas Eve the bells were rung;

On Christmas Eve the mass was sung —
That only night in all the year
Saw the stoled priest the chalice rear.
The damsel donned her kirtle sheen;
The hall was dressed in holly green;
Forth to the wood did merry men go
To gather in the mistletoe;
Then opened wide the baron's hall
To vassal, tenant, serf and all.
Power laid his rod of rule aside,
And ceremony doffed his pride.
The heir, with roses in his shoes,
That night might village partner choose;
The lord, underogating, share
The vulgar game of "Post and pair."
All hailed with uncontrolled delight
And general voice the happy night,
That to the cottage, as the crown,
Brought tidings of salvation down.

— *Sir Walter Scott.*

As he finished speaking, the host and hostess of the yule-log festivities entered. Following them strode the butler, with all-important air, bearing the hot drinks. Into the wassail bowl, trimmed with holly and ivy, upon the roasted apples, was poured the steaming cider, made fragrant with spices. Then arrived the guests, with cordial greetings from host and hostess, and were treated to cakes and cider. The host then cried:

Come, bring with a noise,
My merry, merry boys,
  The Christmas log to the firing,
While my good dame, she
Bids ye all be free,
  And drink to your heart's desiring.

Whereupon entered the servants bearing the yule-log, which was lighted with last year's brand to the words:

With the last year's brand
Light the new block, and
  For good success in his spending,
On your psalteries play,
That sweet luck may
  Come while the log is a-tending.

The hostess heaped on more wood, saying:

Heap on more wood! — the wind is chill;
But let it whistle as it will,
We'll keep our Christmas merry still.
Each age has deem'd the new-born year
The fittest time for festal cheer;
Even, heathen yet, the savage Dane
At Iol more deep the mead did drain;
High on his beach his galleys drew,
And feasted all his pirate crew.

She then treated the servants to a drink from the Christmas bowl, and had barely finished when the waites came caroling: "God rest ye, merry gentlemen!" As they finished, they stood back to admit Father Christmas, clad in a long, flowing gown of beautiful green and ermine. All joined in singing, "Now he who knows old Christmas." The host greeted Father Christmas who threw favors from his sack to the guests. Three boys then recited:

OLD CHRISTMAS RETURNED

All you that to feasting and mirth are inclined,
Come, here is good news for to pleasure your mind,
Old Christmas is come to keep open house,
He scorns to be guilty of starving a mouse:
Then come, boys, and welcome for diet the chief,
Plum-pudding, goose, capon, minced pies, and roast beef.

The holly and ivy about the walls wind
And show that we ought to our neighbors be kind,
Inviting each other for pastime and sport,
And where we best fare, there we most do resort;
We fail not of victuals, and that of the chief,
Plum-pudding, goose, capon, minced pies, and roast beef.

All travelers, as they do pass on their way,
At gentlemen's halls are invited to stay,
Themselves to refresh, and their horses to rest,
Since that he must be old Christmas' guest;
Nay, the poor shall not want, but have for relief,
Plum-pudding, goose, capon, minced pies, and roast beef.

— *Old Carol.*

And all were bidden to dinner.

So ended a happy day of revels, in which the Christmas spirit loomed large and sweet, and the parents went home to wish that they had lived in the school days of the present instead of those of long ago. By dividing the school into groups of older and younger children, and by moving from place to place, the exercises had a simplicity and a freedom from that stiffness and striving for effect which render harmful many "closing exercises." The sweetness and thoughtfulness of the older chlidren toward the younger, the absence of the "I am bigger and wiser than you" atmosphere, and the lack of self-consciousness on the part of those who contributed to the entertainment were most noticeable. Above all shone out the spirit of good-will and of helpfulness. The German play was given twice, and the French carolers went to four different places, showing the same interest and earnestness the last even as the first time.

GENETIC PSYCHOLOGY THE BASIS OF A NEW EDUCATION

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A well-known German educator, speaking recently in high terms of American contributions to educational theory and practice, regretted that it consisted of fragmentary, isolated, and often unsystematic studies. "There is one man in America," said he, "who could organize this material; and that man is G. Stanley Hall."

Adolescence is Dr. Hall's reply to the wish of his German friend. But is it a systematic treatise? Would Dr. Hall attempt to organize his material, if he could? In the light of his expressed scorn for the "cartographer and tabulator of the fields of knowledge," we are inclined to think not. The book is in perfect accord with Dr. Hall's usual method. A wealth of material drawn from child-study, anthropology, criminology, physiology, sociology, and numerous other "ologies" has been worked over, digested, and — sifted. There we are not so certain. One is amazed at the extent of knowledge in all fields, at the audacity and suggestiveness of the ideas and theories presented; but they are hurled at us with little regard to system. Many of these studies were made by students of Dr. Hall, and consequently reflect his own preconceptions. He is the blazer of a new trail in psychology; too much of a genius to be disturbed by lack of method, content, we may well believe, to allow someone of less original power and insight the privilege of working over his contributions into more systematic form. The first discoverer of a new land is never able to give us a complete map of the country. Just as little ought we to expect a thoroughly organized and balanced treatise from one who has made extended original contributions to a science. Nevertheless, there is a

unifying idea, a thread of continuity running through the entire book. We have the outlines of a new psychology and a new education.

While the theory of psychogenesis presented in the book is meant to serve as a basis for a new education, it is the portion which is by far the most clearly defined and most originally conceived. "The new psychology," lately the name used to designate the experimentalist school, receives another connotation when applied to Dr. Hall's theory. He departs radically from orthodox psychology, first in point of view, secondly in method, thirdly in the material which he admits as data, and finally, and necessarily, in his conclusions.

The point of view is that of genesis. But "genesis" is here used in a larger than its accustomed significance. It is not restricted, as in most genetic psychology, to an order of the development of an individual mind. Still less does it harmonize with those epistemological pseudo-genetic accounts of mind which admit the adult consciousness as their only data and find their method in speculation and introspection. "Mind is almost coextensive with life — at least, animal life." With such a view of mind, its genesis is naturally presented in biological and evolutionary terms. Dr. Hall says in his preface that "the genetic ideas of the soul which pervade this book are new both in matter and method. If they are true, they mark an extension of evolution into the psychic field of the utmost importance." While agreeing in general with the author that his view-point is original, we must, however, take exception to the calm way in which he ignores the contributions of the English school of evolutionists to a biological psychology. We are certainly not obliged to revert to the time of Aristotle, as he intimates, to find a psychology based upon biology. Had Darwin, Spencer, and Romanes not prepared the way, it is doubtful whether we should have been favored with Dr. Hall's illuminating treatment of a biological psychology. The oversight can be explained only on the ground of excess of enthusiasm for his own presentation of the subject.

The chief articles in Dr. Hall's creed — his attitude is rather

that of a man who presents a creed than of one who presents a theory — sifted and selected seem to be:

1. "There are as many types of mind as of body, and *vice versa,* and we can truly know soul only through body, and conversely can know body only through soul." As a corollary to the above would follow a statement, often reiterated, that "much, if not most, soul is lost. With extinction of every animal type a soul-type vanishes from the world."

2. "Each character-type is thus a fulfilled possibility of development in some specific direction, and in man is based on unconscious, instinctive, prehuman, or animal traits, the elements of which are combined into aggregates of greater or less cohesion according to age or persistence in time." He speaks here of a "general psychonomic law which assumes that we are influenced in our deeper, more temperamental dispositions by the life-habits and codes of conduct of we know not what unnumbered hosts of ancestors, which, like a cloud of witnesses, are present throughout our lives." This may be called a statement of the recapitulation theory, if you will, but it is expressed in general terms. There are no passages in the book which uphold the view of a direct, unvarying parallelism between ontogenetic and phylogenetic development. Direct parallelism is the objectionable feature in the usual statement of a recapitulation theory. No one who accepts the theory of evolution can object to Dr. Hall's formulation of the theory of recapitulation.

3. "As physical nature could hardly be really taught before the development hypothesis, so psychic natures, now so misrepresented, cannot be properly taught, or will at least then be far more effectively taught, and not only without the present mental wreckage, but with vast moral and intellectual economies." Genetic psychology is to be the handmaid of education.

The method.— Dr. Hall has been severely criticised for his large use of the questionnaire method. In *Adolescence* he turns the tables upon his critics, attacking the method of introspection on the ground of its inadequacy. The mental processes of the child, the animal, and the savage — all rich mines for the genetic psychologist — cannot be studied by the method of introspection.

The mind of primitive man, now extinct, can be known only through the interpretation of the relics he has left. "The conscious adult person is not a monad reflecting the universe, but a fragment broken off and detached from the great world of soul . . . . well fitted to illustrate some aspects, and hopelessly unable to exemplify or even know other regions in the cosmos of soul." But introspection can take us no farther than the conscious mental processes of the individual adult. The present attentive state, flitting though intense, does not inform us of the past history of even the individual mind, for much that was once present to consciousness has now lapsed, and can be known and studied, according to Dr. Hall, only in its effects upon the organism which appear in "motor responses" and "subconscious psychoses." In conclusion he states that "we must collect states of mind, sentiments, phenomena long since elapsed, psychic facts that appear faintly and perhaps but once in a lifetime, and that in only a few and rare individuals; impulses that, it may be, never anywhere rise above the threshold, but manifest themselves in automatisms, acts, behavior, things neglected."

While we do not deny the value of these materials, the method has not yet been devised which can be trusted to give us a true report upon them. Questionnaires, multiplied observations, must rest upon a securer basis, if inductions from them are to be accepted as trustworthy. Dr. Hall recognizes the fact that much of this collected material is in a crude and unorganized state; that some of it is worthless. But he claims most justly that this is necessary in a new science. He does not, however, notice the difficulty which every conservative student of mind will see at once — that data of this nature may be easily juggled with. Like statistics, they may be made to prove any theory which one wishes to read into them. The method advocated by Dr. Hall will not be largely adopted, we hope, until it has evolved a check by which to test and verify its results. Otherwise we shall be led into the wildest romances upon mental life and behavior. Much that Dr. Hall has given us in these volumes will be relegated by the majority of psychologists to the field of psychological romance. Much of it must certainly remain unproven; although

the illumination which it throws upon mental phenomena may at least be accepted as a provisional argument for its truth. In time these theories of President Hall may be considered as necessary to the explanation of mind as the theory of ether to the interpretation of certain facts in the physical world.

Yet what Dr. Hall can do with impunity because of his mental grasp and clear insight, every tyro will consider his right and privilege. Where, then, shall we end? The careful psychologist may well exclaim before the possibility of a universal application of this method: "Give us pause!"

The field of genetic psychology, as Dr. Hall views it, is wide. (1) It builds upon anthropology, studying not only the races that have disappeared, but those that are vanishing. He desires to get something like a composite picture of racial development, and thus see mind in its stages of evolution. While he holds that the child and the race are the key to each other, he still recognizes the limitations of the recapitulation theory. (2) It includes the study of defectives. By the process of devolution the more complex processes are the first to disappear, leaving the earlier forms intact. We thus get a picture of psychical evolution in its inverse order. (3) It includes animal psychology. Here careful observation is needed, lest we read into the activities of the lower animals mental processes that are not present. "We shall never truly know ourselves till we know the mind of animals, especially those in our own line of descent," says Hall. This field has been largely worked in the last few years. Modern empirical psychology seems disposed to admit reliable data from animal psychology as explanatory of the development of the individual mind. (4) The most numerous studies in genetic psychology belong to the department of child-study. Even those who have decried child-study most must confess that, when the crude materials have been organized, when the careless and untruthful observations have been weeded out, there still remains a residuum extremely rich in suggestions as to the process of mental evolution, and of great practical value in pointing out effective methods in education. *Adolescence* is a proof of the value of child-study.

Conclusions.— Hall makes out three main stages in the devel-

opment of the individual mind. The first is that of early infancy. He touches lightly upon it, as it bears only indirectly upon the main problem of adolescence. Now the child gets his fundamental psychophysical endowment. Our earliest ancestors, in their experiences with light and darkness, cold and heat, sun and storm, in their struggle with wild animals, have shaped the rhythm of life and bestowed upon their offspring their basal mental attitudes. "The feeling-instincts are the bearers of mental heredity." Here "we have to deal with the archæology of mind, with zones or strata which precede consciousness as we know it. . . . . These radicals of man's psychic life, while some of them are decadent, rudimentary, and superseded, are often important just in proportion to the depth of the phylogenetic strata into which they strike their roots. Hunger, love, pride, and many other instinctive feelings, to say nothing of pleasure and pain, can be traced far down through the scale of vertebrate and invertebrate life."

Feeling and sensation are confused in this nebulous period of the mind's unfolding, as they sometimes are in the nomenclature of certain psychologists. Mental life centers chiefly about the metabolic and nutritive functions of the body. "The true beginning for a psychology essentially genetic is hunger, the first sentient expression of the will to live." Touch might be called a primitive sensation, since all other senses arose by gradual differentiation from it. Smell was one of the earliest senses to be differentiated from general sensibility. It appears early in infancy, and there undoubtedly plays its original rôle, that is, as an aid to prehension. It becomes less and less important as life advances. Hearing and vision as organs of the mind become progressively finer and better adapted to their functions, up to the period of complete maturity.

The most original contribution in the book is the explanation of what is generally known as the drill period, roughly marked off by the years from eight to twelve. The child is less liable to disease, grows more slowly, and seems mentally and physically to have reached a time of greater stability, in marked contrast

to the instability of the periods preceding and following. To quote Dr. Hall:

> Everything, in short, suggests the culmination of one stage of life, as if it thus represented what was once and for a very protracted and relatively stationary period the age of maturity in some remote, perhaps pygmoid, stage of human evolution, when in a warm climate the young of our species once shifted for themselves independently of further parental aid. The qualities now developed are phyletically vastly older than all the neo-atavistic traits of body and soul, later to be superposed like a new and higher story built onto our primal nature. The momentum of the paleo-psychic traits is great, and they are often clearly distinguishable from those to be later added. . . . . Indeed, there are a few indications of a yet earlier age nodality or meristic segmentation, as if amid the increased instabilities of health at the age of about six we could still detect the ripple-marks of an ancient pubic beach now shifted high above the tides of a receding shore line, as human infancy has been prolonged.

However we may regard Dr. Hall's theory, every observant teacher and parent recognizes these changes in child-nature. The genetic psychologist has heretofore been content to describe these periods of development. Dr. Hall is the first to attempt an explanation in other terms than the parallels of bodily changes.

Adolescence is the new and higher story added by development.

> Development is now less gradual and more saltatory — suggestive of some ancient period of storm and stress, when old moorings were broken and a higher level attained. . . . . The cohesions between the elements of personality are loosened by the disparities of both somatic and psychic development, and if there is a rest at any stage or in any part before the higher unity is achieved, there is almost sure to be degeneration on a lower level than before. . . . . Early adolescence is thus the infancy of man's higher nature, when he receives from the great All-mother his last capital of energy and evolutionary momentum.

There is a parallel development of the nervous system along the cord, basal ganglia, cerebellum, and cerebrum which would give us the complete picture of mental evolution, if we could interpret it correctly. In the earlier stages sense-stimuli tend to pass over into reflex action; with the dawn of adolescence there is an increase in the number and complexity of associations, so that stimuli pass by the long circuit route, giving rise to deliberative action.

Dr. Hall pays slight heed to the dictum of the psychologist that there can be no psychology of the unconscious. All the fundamental activities are on this level; in fact, most of the activities of the soul do not give rise to consciousness, a phenomenon which represents but one type of mind, a late and partial development. In his outline of psychogenesis Dr. Hall is obliged to introduce a psychology of the unconscious to make his theory consistent; yet it is not necessary that it play so much of a part even in his theory.

We have attempted to give in brief the chief characteristics of Dr. Hall's theory of psychic evolution. But psychology is not to be studied for itself; it is not to be regarded as a pure science. Education is man's chief problem, and genetic psychology is the guide-post which points the way.

While the different features of the new education have not been clearly defined, the suggestions as to general and special method scattered throughout the book are perfectly consistent with the psychological presuppositions. In general, before the value of subject-matter or method can be decided upon, we must determine what instincts are desirable either for their own sake or for where they lead, and what are undesirable and to be checked and left to "progressive atrophy." This would lead to nothing particularly novel or revolutionary in school practice. Since school systems have existed, educational thinkers have asked themselves the question: What instincts shall we foster and what frown upon? answering it, to be sure, in various ways, yet recognizing the necessity of first determining this problem before sketching a system of education.

Next comes the study of the individual child, his possibilities and budding talents. Perhaps Dr. Hall lays unusual emphasis upon the needs of the individual child. It would certainly be desirable if the school could more often take the individual into consideration rather than the class.

Having determined upon our ends in the light of the child's past and his future, it then remains to be determined what mental pabulum will further this end, and in what manner it can be most economically and effectively presented. Dr. Hall recommends in

brief and general terms a course of study which has already been worked out in a few schools. Dr. Dopp in her "Industrial and Social History" series is presenting the material so that it can be utilized in the ordinary school. Her books are a practical application of Dr. Hall's theory of psychogenesis. Why all this emphasis upon primitive life? Is it not wasteful? Is it desirable? Dr. Hall has met some of the objections which we might naturally expect to arise. "We shall save the child from the omnipresent dangers of precocity." We may thus also foster the impulses through which the child will be able to realize his complete inheritance and "make it possible to utilize for further psychic growth the results of the higher heredity which are the most precious and potential things on earth. There are other arguments which Dr. Hall might well have used; one is especially important. The modern child is born into a very complex society — too complex to be understood even in mature life. Yet a clearer insight into the meaning and possibilities of this society may be gained through the study of the simpler forms, with their gradual development into the more complex. We are inclined to believe that this material, rightly presented, furnishes us with the most economical means of fitting the child to become an efficient member of modern society.

Dr. Hall does not overlook the necessity of formal work or of drill methods. He says:

> Even if it be prematurely [the child], must be subjected to special disciplines and be apprenticed to the higher qualities of adulthood, for he is not only a product of nature, but a candidate for a highly developed humanity. . . . . To many, if not most, of the influences here there can be at first but little inner response. . . . . These necessities may be hard for the health of the body, sense, and mind. Pedagogic art consists in breaking the child into them betimes as intensively and as quickly as possible, with minimal strain and with least amount of explanation and coquetting for natural interest.

This is in perfect harmony with Dr. Hall's theory of psychogenesis. The years from about eight to twelve, as has been noted previously, seem to reflect a period of great stability in the race, when presumably in some post-simian age they reached an early maturity. Whatever our view of the meaning of this stage may be, we can but adopt Dr. Hall's suggestions as to method. Drill

in arithmetic, and in reading, writing, and spelling; the study of foreign languages, if they are to be thoroughly mastered; arbitrary memorization — these should be the instruments of the school at this period. It has become almost universal in school administration to give these grades, if any, into the hands of the new and unskilled teacher. Experience has taught us that less harm can be done to child-nature at this period than either before or after. As Dr. Hall says, this is the "age of little method and of much matter." The teacher is but a "pedotrieb."

Drill methods, however, are not applicable either to the periods preceding or to those following. The period of infancy is the period of play, when attention must be held by strong appeals to interest. The period of adolescence also calls for freedom and opportunity for individual expression. "Over accuracy is atrophy."

The new education sketched in *Adolescence* includes all that is good in the old; gives it a psychological basis; finds for drill methods a fitting time; but it also demands that the needs peculiar to the infant and adolescent shall also be recognized. If an extract here and there in the book would seem to indicate that Dr. Hall is an extremist, a careful survey of the whole book convinces one that the methods recommended are perfectly sane. So sane are they, in fact, that the school has already recognized the validity of the greater portion and incorporated them in its practice.

When we come to the discussion of special methods, we strike the weak place in the book. Science has been treated with deference, and a special chapter assigned it. Evidently Dr. Hall considers this "the knowledge of most worth." English, history, and drawing are discussed in the same chapter with superstitions, association, and memory. To this same chapter is also relegated the consideration of the normal school, the high school, the college, and the university. As the schools of the adolescent period they deserve a special chapter for their discussion. No part of the book is so poorly digested, so little organized, and so replete with illustrations of the deficiencies of the questionnaire method.

Although somewhat startling in his originality, we are inclined to believe that Dr. Hall has by a series of mental leaps impossible

to most of his readers arrived at conclusions that will later be received in the most conservative of scientific circles. *Adolescence* bears marks of genius in the fire and poetical fervor of its language. Seldom does one have the pleasure of reading a scientific book which rises above the cold and exact phraseology that properly clothes close and careful reasoning. This book frequently leaves the realm of proved fact, and its imaginative diction is in perfect keeping with its thought. A stylistic peculiarity which we cannot so readily overlook is the coinage of new words. This may have been necessitated in a measure by the novelty of the thought; yet an old and familiar word and phrase might often have been substituted with great gain in clearness of expression.

In spite of its failings, which are on the mechanical side, *Adolescence* is unquestionably an epoch-making book in education.

TEXTILE WORK IN LINEN

EDWARD F. WORST
Principal of the Yale School, Chicago

The line of work described in the following article is a problem which was given to the pupils of the sixth grade of the Yale Practice School, Chicago, under the supervision of the principal of the school. Enough flax was grown to permit the spinning of hundreds of yards of thread and the weaving of many yards of cloth. All the apparatus necessary was made by the pupils in the shop.

One of the most interesting features of the textile work is the preparation, so far as possible, of the raw materials for weaving. Flax is perhaps one of the most simple illustrations we have. The fact that it will grow in almost any kind of soil and in almost any part of the United States makes the various processes necessary for its preparation for the spinning-wheel, and finally for the loom, easy problems which may be worked out in any grammar school.

Flax is sown at any time from the first to the middle of May, and is harvested about the last of July or the first of August. After the seed is sown, it requires no care whatever. The plant is from two to three feet in height, with small, pointed leaves and blue flowers. A field of it in bloom presents a most beautiful appearance. The stems are very peculiar, being hollow and covered with fibrous material. The flowers grow in clusters at the top of the stalks, and, when they fall off, are succeeded by round seed-vessels, the size of a pea. When the harvest-time comes, it is not cut like wheat and oats, but is pulled. As fast as the stalks are pulled, they are made up into sheaves, with all the stalks laid parallel and all the root-ends even. It is then left for a few days to dry in the sun. The seed is then separated from the stem, as illustrated in Fig. 1.

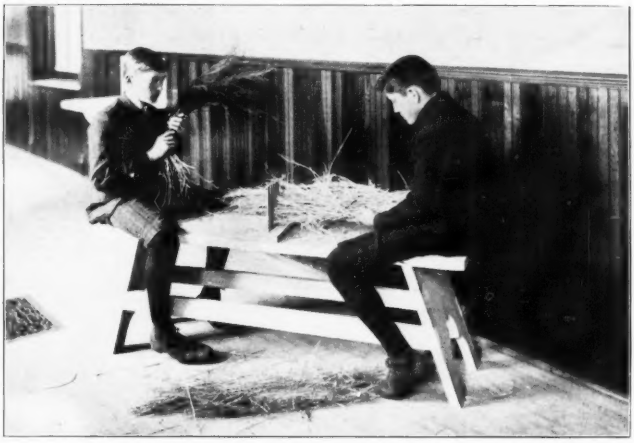

FIG. 1.— Removing the Seed.

FIG. 2.— Pounding, Breaking, and Hackling.

This apparatus is easily made by the pupils in manual training, and consists of only a bench and a comb made of quarter-inch iron rods, the ends being ground to a point on the emery wheel or grinding-stone, and set in a piece of hard wood $12'' \times 2'' \times 1''$. The comb is held to the bench by means of small clamps, or is screwed down. The process of removing the seed is rather a particular one, as great care must be taken not to injure nor break the upper stems.

After the seed has been separated from the stalk, the stalks are tied up in small bundles and placed in water to soak. Care should be taken that it is completely immersed. Standing water, a pond or slough, is preferable. It must be remembered that a wagon-load of flax is not needed with which to experiment. The quantity which it is possible to grow in a flower-bed or even a window-box, if properly cared for, will answer for experimental purposes. A small amount may be soaked in almost any kind of receptacle. The time for soaking varies according to the temperature of the water. Usually three of four days is sufficient in the vicinity of Chicago. When the fibers begin to separate from the stem, and the woody core of the stalk snaps readily, it should be removed from the water. If allowed to remain there too long, the fibers as well as the stem rot. This process is called retting the flax. After it is removed from the water, it is spread upon the grass to dry and bleach.

The retting process may be carried on without placing the flax in water. It is accomplished by spreading the flax on the grass, allowing it to remain until the dew and rain have done the retting. This method requires a longer time. With the inexperienced person the results might be more satisfactory if the two methods were combined. Soak in water for about two days, and then spread upon the grass, allowing the dew and rain to complete the process.

We are now ready to begin the breaking. Before this process is begun, the stalks are thoroughly dried. With us the sheaves of flax were placed upon the register. This causes them to become very brittle. Before the flax is placed in the brake, it is put on a block of wood and thoroughly pounded, as shown in the right of

Fig. 2. This really begins the breaking. It is then placed in the regular brake, as shown in the center of Fig. 2. This brake is a simple piece of apparatus, also made by the boys. We have three brakes, of varying sizes, the smallest being made in such a way as to break such parts of the woody core as are not broken by the largest. This breaking is done to get the fibers free from the woody cores of the stalk and thus make them ready for use.

After the breaking has been thoroughly done, what remains is hackled. The hackling consists in passing the flax through a series of combs, as represented in the left of Fig. 2. The hackle is not a difficult piece of apparatus to make. It consists of wire nails ground into long, sharp points. These are driven through a circular or rectangular piece of wood, banded with an iron strip, and glued and screwed to a support, as shown to the left of Fig. 2. The process of hackling removes many of the pieces of stalk not removed by the brake, and it also splits the fibers. Even after this process is completed, there are still bits of the stalk left. To remove the last of it, the flax is brushed, as is shown in Fig. 3.

The flax is now ready for the distaff, and is spun into thread, as shown in Fig. 4. If linen cloth of the natural color is desired, it is woven into cloth at once; but if the white effect is wanted, the thread is sometimes boiled and bleached before weaving. Oftener, however, the thread is woven and the cloth bleached. The quickest way to accomplish this is to use chloride of lime. The part of the thread to be used as woof is taken from the spool of the spinning-wheel and placed on the bobbins of the shuttles to be used in weaving. That part of the thread to be used as warp is measured off on a large reel. From the warping-mill it is taken to the warp-beam of the loom. The ends of the thread are threaded through the harnesses and reed, and fastened to the cloth-beam just beneath the harnesses. The loom is now ready for the woof.

This line of work might readily be carried out in schools where space for planting purposes is not so valuable as in Chicago and

FIG. 3.— Brushing the Flax.

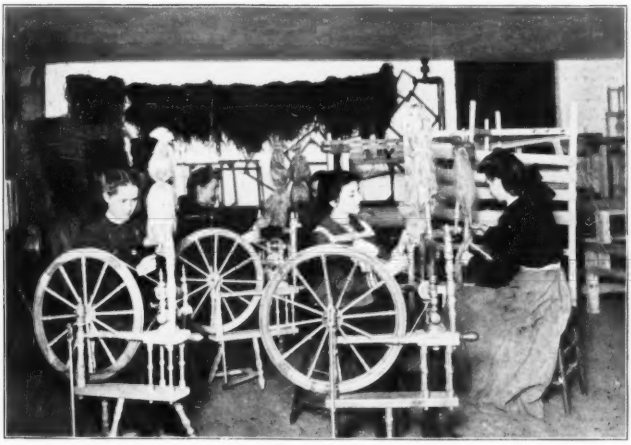

FIG. 4.— Spinning.

vicinity. It is especially adapted to the sixth grade, because of its close relation to the history work of that grade and the linen industries of Ireland. So far as possible, all the hand-work in the Yale School is related to other lines of school work as outlined in the course of study.

THE MAKING OF BEET SUGAR

SEVENTH GRADE — FRANCIS W. PARKER SCHOOL

HENRY T. MORTENSEN
Teacher

Experiments in the growing of sugar beets, and the manufacture of sugar from them, have been carried on by the children of the sixth and seventh grades at intervals, through a period of three years. During this time the children have studied the various industries of the United States, and the manufacture of sugar was chosen as a typical industry, offering opportunities for study and experiment adapted to the comprehension and ability of the children.

Each attempt has contributed some improvement in method, and the results each time have been more satisfactory than those of the preceding year. Though sugar has not been obtained, the results have been sufficiently encouraging to the class to warrant the continuation of the work.

In the spring of 1904 two plots, each four by sixteen feet, were set aside for the growing of sugar beets. The sixth and seventh grades planted seeds of "Vilmorin's Imperial" variety. The seventh grade mixed one and one-third pounds of fertilizer with the soil of its plot, while the sixth grade used double that amount. Before the seeds were planted the classes estimated the total expense of planting the beets to be $34. This included the hauling and spreading of loam, the plowing under, the price of seed, and the price of the fertilizer. The seeds were planted in May, 1904. At the proper time the plants were thinned, and by the end of the school year were in condition to be left until harvesting time.

When the school opened in October, the beets had attained a considerable size, but showed no signs of ripening. The approach of the heavy frosts of November, however, made it necessary to prepare for harvesting.

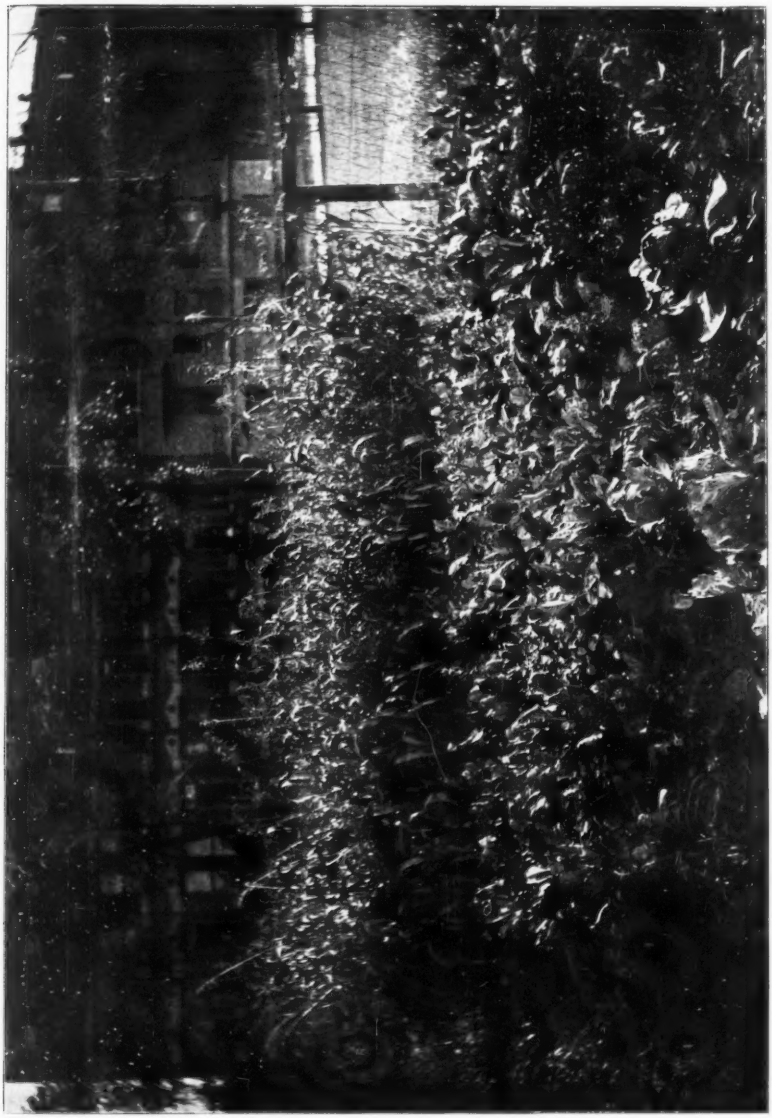

FIG. 1.—The Sugar Beets in the Garden.

For supplementary reading the seventh grade used the following articles, entitled "Sugar Beets," "Maturing of the Beet," and "Manufacture of Sugar." These were adapted from Hamburger's *Beet Grower's Manual* and given to the children in typewritten form.

SUGAR BEETS

A good sugar beet should be regularly shaped (cone-, pear-, or olive-shape). Many side roots are disadvantageous, because they make cleaning difficult and increase waste. The side roots and poor shape of beets are often due to shallow plowing or a too impervious subsoil. Small beets are, as a rule, richer in sugar than large ones. The ideal weight is considered to be about one and a half to two pounds, and the beets should not be more than fourteen inches in length. The head should be small.

The leaves of the plant should be thick, and those which lie flat are to be preferred, as protecting the beet against frost.

It is important not only that a sugar beet should be of the proper shape and size, but also that it should be grown in such a manner as to secure the protection of the soil for all of its parts except the neck and foliage. This position can be secured for the beet only by growing it in a soil sufficiently pervious to permit the penetration of the tap root to a great depth.

If the beet in its growth should meet a practially impervious soil at a depth of eight or ten inches, the tap root will be deflected from its natural course, lateral roots will be developed, the beet will become disfigured and disturbed in shape, and the upper portion of it will be pushed out of the ground. Experience has shown that the content of sugar in the portions of a beet which are pushed above the soil is very greatly diminished.

MATURING OF THE BEET — HARVESTING

A sure sign of the ripening of the beet is the change of the dark green color of the beet fields into a light yellowish-green. All of the large outside leaves will be found to have withered away, leaving only the "heart" with its yellowish-green leaves to stand. Of course, it is only by chemical analysis that the ripeness can be accurately established, and the beets should not be considered fully matured until the sugar content is found to increase no more.

It requires about four and one-half to five months after planting to procure ripe beets. The time of our Indian summer is the main period of the formation of the sugar in the beet. The beet does not grow larger, but its weight and sugar content materially increase. Simple freezing of the beet would not cause any change in the sugar content, but alternate freezing and thawing would cause it to turn black and reduce its content. A sudden change of temperature unfavorably affects a slightly frozen beet.

After the beets have been loosened with a thin bladed plow which splits the earth between the rows, or a puller which loosens without removing them, the beets must be topped. The topper grasps the leaves in the left hand, and with the right removes the crown or top of the beet by one blow, cutting just at the base of the bottom leaf.

It is important that the top of the beet be cut off down to the neck so as to include with the top all that portion of the beet to which the stems of the leaves have been attached. The object of removing this portion of the beet is to prevent the mineral salts, which have accumulated in large quantities therein, from entering the factory. These mineral salts exercise a very deleterious influence on the crystallization of sugar, and therefore should be removed. They are well fitted for fertilization purposes, and are of more value when left upon the soil than when removed to the factory.

MANUFACTURE OF SUGAR

Internally the beet root is built up of a large number of concentric rings, formed of a much larger number of small cells or cylinders, each of which is filled with a watery solution of several substances other than sugar.

The first process through which the beets are put after being washed and weighed is that of slicing. The slicing is done by a machine which does it in such a way that the slices will not lie too closely together when the diffusing liquid is passed through.

As explained above, the cells contain impurities. Only crystallizable material — i. e., the sugar in this instance — is able to pass through the cell walls. It is desirable, therefore, that the slicer rupture as few of the cells as possible, and at the same time expose as large a surface as possible, thus keeping the sugar free from impurities and making the cell membranes accessible to the diffusing liquid.

By the methods formerly used the beets were ground into a fine pulp. Thus the cells were torn, and their entire contents, sugar as well as salts, and other impurities, were carried into the juice which was obtained from the pulp by pressing, maceration, or centrifugal force. Thus a great deal of foreign matter was present in the juice and made its purification very difficult. At present, however, what is known as the diffusion process is universally used. It differs from the old one in that the juice is no longer separated by pressure, but by diffusion. The hot water acting upon the cell membranes of the sliced beets allows the sugar in the cell to diffuse with the water on the outside until it contains the same percentage of sugar as that on the inside.

By means of a revolving chute, the fresh beet slices, called cossettes, are conveyed into large, cylindrical, closed tanks or cells of a diffusion battery on the floor below. These cells (each holding about two to two and a half tons) are arranged in a circle or in straight rows, connected by piping and valves to facilitate filling with fresh sliced beets, and discharging the pulp or slices from

which the sugar has been exhausted. It is in the diffusion battery that the sugar held in solution in the cells of the beets is extracted.

The operation proceeds as follows: First one cell is filled with cossettes, and hot water (80° C.) is admitted until the cell is filled. Assuming now that the beets contain 12 per cent. of sugar, an interchange takes place, and the cossettes give up their sugar until only 6 per cent. remains, the other 6 per cent. having been taken up by the water. Meanwhile the next cell has been filled with cossettes, and the water containing 6 per cent of the sugar is forced into it, having been heated to 80° C. in transit. In this second cell again an interchange takes place, but the water, containing already 6 per cent sugar, will extract but half the difference between the sugar in it and in the cossettes; this water will now contain 9 per cent. of sugar, and is forced into the third cell, where it will again absorb half the difference between its own sugar and the cossettes. The same process is continued until the water has become sufficiently rich in sugar for evaporation. In the meantime fresh water has again been forced into the first cell, and passes through the number of filled cells in regular order. When the cossettes in the first cell have become exhausted of their sugar by continued passage of fresh water, the contents are discharged through a trap door and replaced by a fresh charge, and cell No. 1 now becomes the last in the series. The second cell is next to be exhausted and recharged in its turn, and thus every following cell continuously.

After the juice has been taken from the diffusion battery, milk of lime is added, which combines with the non-saccharine substances. To remove these, carbonic-acid gas is passed through the juice, and the precipitate is removed by filtering. The juice is treated with sulphuric-acid gas, and passed on into evaporators, where it is boiled down to a syrup. When this stage has been reached, it is boiled to a grain in a vacuum pan. The large crystals are separated from the smaller ones and the molasses by centrifugals. These are then bleached, dried, and packed ready for the market.

After reading the first article, the class examined the stand of beets in the garden and made written reports on its condition, of which the following is among the best:

OUR BEET CROP

HELEN CONNOR

We found our sugar beets in fairly good condition, and pulled up several that had grown above the ground a great deal. These beets showed us that they had grown a few inches (seven or eight) into the soil, but had come to impervious soil, through which their roots could not penetrate, so they had turned to one side and also had forced the beet far out of the ground.

The part that remains above the ground has to be cut off before the rest of the beet can be made into sugar, because that top has minerals in it that would prevent the sugar from crystallizing. *(Corrected paper.)*

No differences in the crops of the two plots due to the fertilizer were discovered.

The severity of the frosts necessitated the removal of the beets from the ground November 15, 1904. The beets, topped, trimmed, and washed, weighed 160 pounds, averaging about one and one-half pounds each. Sample beets which were tested by Mr. W. W. Wolfe, chief chemist of the Rock County Sugar Co., showed a sugar content of about 12 per cent., which is very low. A good beet should contain over 20 per cent. of sugar.

The following description of the process used by the class was written by one of its members:

MAKING OF BEET SUGAR

CLAUDINE V. STURM

As the beets were pulled up from the garden, the tops were chopped off with a hatchet. It was necessary to use a hatchet, because none of the knives at the school were heavy enough to cut through the beets. After this they were brought to the laboratory, where we washed and weighed them. The next process was the shredding. This we did with a simple kind of grater. See Fig. 2.

After the shredding we put the cossettes (shredded beets) in a large canvas. This canvas we folded and put into a large press, which squeezed all the juice out of the cossettes. Into this juice we put lime, which combined with the impurities, and kept the juice from fermenting.

The carbon dioxide which we passed through the juice made all the impurities settle to the bottom of the jar. This gas we made by putting marble chips into a generator. On this marble we poured hydrochloric acid, and the gas formed passed from the generator through a glass tube into the jar with the juice in it.

To get this purified juice from the jar without disturbing the sediment, we siphoned it from one jar to another. This juice we

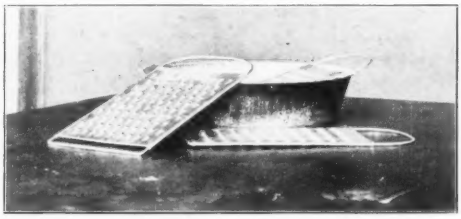

FIG. 2.— Graters.

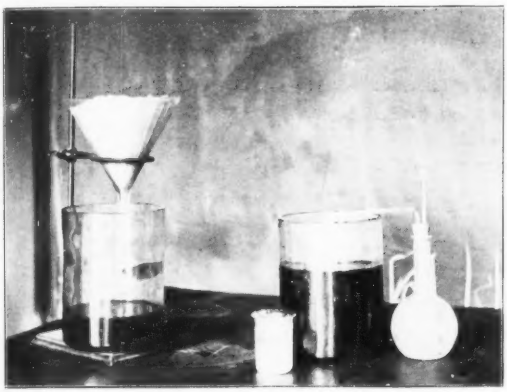

FIG. 3.— Apparatus for Adding Lime, and for Carbonating and Filtering Juice.

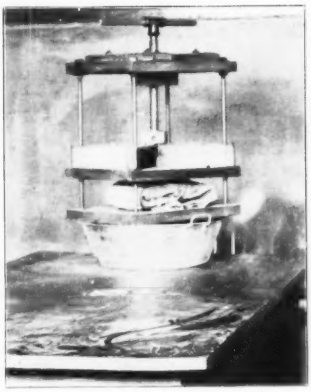

FIG. 4.— The Press.

FIG. 5.— Preparing the Beets.

put through filter paper, which further purified it. The last process was the boiling down of the juice. This was done in a granite-ware pan, which was placed over several Bunsen burners. It required about fourteen or fifteen hours of boiling to reduce it to the stage at which crystallization should take place. *(Corrected paper.)*

The product resulting from these experiments is a thick, dark-brown substance, which, according to sugar experts, contains a considerable percentage of sugar. The cause of its failure to crystallize is probably twofold: first, that at some time during the various stages it became acid; second, that after the final boiling down it was allowed to cool too rapidly.

Such apparatus as could be devised and used in the school was employed in the work. The shredders were such as are used in kitchens for shredding vegetables (see picture, Fig. 2). The press was designed as a book-press, but it was fairly well adapted for squeezing the juice from the beets.

It was necessary to incline it so that the juice might run into the pan below. A press was needed to obtain the juice from the beets, because the diffusion process previously explained gives too dilute a product to be practical with the facilities for handling it which are available in the school.

During the winter term the grade will attempt to obtain sugar from the product of the experiments, by a process suggested by Mr. Alfred Musy, sugar expert, of Detroit, Mich. The process consists of dissolving the product in water and precipitating the sugar by means of barium hydrate. This precipitate must be washed, dissolved in hot water, and carbonated. After filtration, it must be evaporated again, allowed to cool slowly, and very thoroughly washed.

NOTE.— This work with beet sugar has been only a part of the science work of the sixth and seventh grades. For a complete outline see the Catalogue of the Francis W. Parker School.

A MORNING EXERCISE

SUGAR-BEET MAKING

As an outcome of the work in the making of sugar from sugar beets, the seventh grade gave a "Morning Exercise" to the entire school. While a group of children performed all the operations involved, except those of topping, washing, and weighing, others explained the processes as follows:

WHAT I TOLD IN MORNING EXERCISES

MARGARET BENTLEY

I told the school that we took from the ground the beets which we planted last year. We chopped off most of the tap roots and all of the beets which had been pushed up above the ground. Then we washed them. When we weighed them, we found the total weight to be 160 pounds.

I showed the children some of our beets, which were almost all short and chunky. I also compared them with two beets from a sugar factory. One was from French seed, and the other from German seed. The French beet was considered the better, because it was longer and thinner. *(Corrected paper.)*

WHAT I TOLD IN MORNING EXERCISES

FLORENCE WIEBOLDT

After the beets were weighed, they were shredded. The shreds looked very much like cold slaw. They were wrapped in canvas, and the parcel was put into the press and squeezed until all the juice was pressed out. *(Corrected paper.)*

WHAT I TOLD IN MORNING EXERCISES

LETITIA FYFFE

After the juice had been squeezed from the shredded beets and put into a jar I tested it with litmus paper and found that it was neither acid nor alkaline; so I added enough lime to cause the liquid to turn the litmus paper blue.

Then I used a Florence flask with a quantity of ground marble at the bottom of it. From the flask a bent tube reached into the

jar of juice. Through another tube which led into the flask I poured hydrochloric acid (see picture, Fig. 3). The acid, acting upon the marble, made carbon dioxide. The gas passed through the bent tube into the sugar juice, causing all the impurities to settle to the bottom. *(Corrected paper.)*

WHAT I TOLD IN MORNING EXERCISES

LAURA DELANO

After the impurities had settled to the bottom of the jar, I siphoned off the upper part of the sugar juice and put it into the filter (see picture, Fig. 3). After it had all filtered through, I put it into a pan ready to be boiled down into sugar. *(Corrected paper.)*

NOTES FROM PARENTS' ASSOCIATIONS

MRS. HELEN MALEY HEFFERAN
President of Illinois Congress of Mothers, Chicago

At the December meeting of the Parents' Association of the Chicago Normal School the subject of "Christmas Giving" was discussed.

Mrs. H. W. Thurston spoke of the opinion that is expressed so frequently in these days, that the spirit of Christmas giving is not what it should be; that it is marred by overdoing and overstrain; that a sense of obligation and of paying debts often takes the place of free expression of love and good-will. Mrs. Thurston maintained that these things are the result of the strenuous method of life in American cities; that something enters into our home for its detriment and into our school life to its harm. To quote from the speaker's words:

> We give ourselves too little leisure to consider the spirit of anything. We are too much absorbed in *doing* things to consider *why* we do them or how they should be done; too much absorbed in buying Christmas presents to consider sufficiently the spirit of giving. The spirit of Christmas giving is *love*. How this would simplify matters for us, if we were to allow it! Let us give in love — never for any other reason — and teach our children to give in love.

Mrs. Thurston advised that the children begin with the home circle. As the child grows, his powers of love and sympathy should expand and grow with him, taking in a wider and wider circle of relatives, friends, and neighbors, until the man and woman in maturity shall have a heart to embrace humanity.

Mrs. A. D. Hefferan said that in the home it was essential that time be given for the children to plan for their gifts; that one should strive for simplicity, not expenditure of money, but some expenditure of thought and effort; that the mother should plan to secure co-operation between older brothers and sisters. This Christmas planning and giving — for love alone, simply and thoughtfully and painstakingly — would develop real character.

Miss Melva Latham then spoke from the teacher's standpoint. She said that the making of Christmas presents in the room created a beautiful atmosphere, for the children had a definite purpose in the making. When the present was to be used by one who was loved there was always a joy in creating. When children were happy, they were good. The results from Christmas work in the schoolroom were always excellent. First, concentration was perfect, because the motive underlying the work was the best — superlatively unselfish. Patience was developed. A child is willing to do again and again, because working for one he loves. Here again the motive controls him. Then the timid child has an opportunity for individual work which strengthens him for his regular school work. Miss Latham emphasized strongly the necessity for appreciation on the part of the recipient on account of the struggles of children to produce something worth while. Be *sure* to *use* whatever is made, if ever so poorly made, or even a trifle in itself. She closed with that beautiful quotation from Jacob Riis' "Is There a Santa Claus?"

> Because, don't you know, Santa Claus is the spirit of Christmas; and ever and ever so many years ago, when the dear little Baby was born after whom we call Christmas, and was cradled in a manger out in the stable because there was not room in the inn, that Spirit came into the world to soften the hearts of men and make them love one another. Therefore, that is the mark of the spirit to this day. Don't let anybody or anything rub it out. Then the rest doesn't matter.

A meeting of Englewood High School Parents' Club on Thursday afternoon, January 19, presented some novel features. The announced topic for discussion was "Fraternities and Sororities" — a subject of such interest to the pupils that they begged to be allowed to attend and to defend their societies. The number in attendance was so large that the meeting adjourned to the assembly hall, and very few of the 350 seats were unoccupied.

The concensus of opinion from high schools throughout the country was presented by Principal Armstrong, Miss Ball, and Mr. Miller (of the Englewood High School faculty), and was strongly against the existence of fraternities and sororities in the high schools.

The meeting was then thrown open for general discussion, and the most prejudiced listener was forced to admire the frank and fearless manner in which the boys and girls presented their side of the argument, as well as their ease and readiness of speech in the presence of so large an audience. Kindly feeling prevailed throughout, as teachers, parents, and pupils drew together in a sort of family council.

While it cannot be said that the boys and girls who favored fraternities and sororities when they entered the hall were of a different mind when they left, yet they left with something new to think about, and since no bitterness of spirit resulted, they will think and think rationally. What more could be asked?

The Englewood High School Parents' Club has always drawn near to the ideal organization of its kind, inasmuch as it has clung to the "conference" plan, and has not permitted extraneous "programs" to interfere with its practical consideration of practical matters. This meeting came even nearer to the ideal, perhaps, than any former one, since it admitted the child himself to the discussion of what was best for him.

Throughout the state of Illinois there is much interest in the question of a closer touch between the home and the school. The superintendent of Coles County requested that a meeting be held in every school in the county on a certain date for the promotion of such a co-operation. Each teacher prepared a short program, which was followed by an informal discussion of school problems. This superintendent has also been holding parents' meetings throughout the fall in the rural schools. These have been largely attended, and it is exceedingly interesting to see the school-yard surrounded by the vehicles in which many of the patrons came. The teachers explain the industrial work the children are doing—sewing, cutting, etc. There is an exhibit of the work, and at the conclusion refreshments are served.

Every school in Charleston now has a parents' club as an adjunct which is an educational necessity, and the community is, in consequence, alive to the interests of the schools. A meeting of the parents of Charleston high-school pupils was held in the

assembly hall on the evening of January 13. Mr. J. A. Shortess, president of the board of education, opened the discussion on "The Effects of Irregularity of Attendance on Later Habits." He discussed the subject from a business man's standpoint, showing how good habits were the basis of success. He emphasized the fact that responsibility for absence and tardiness rests not so much with the teacher as with the parent. Hon. H. A. Neal followed with suggestions for overcoming irregularity in attendance. Mr. Jeffrey, principal of the high school, cited some of the flimsy excuses offered by pupils and parents for absence and tardiness. It appeared to be the sense of the meeting that excuses should not be asked for, as they tended to justify the pupil in his delinquency. Mr. Elwood, superintendent of the Charleston schools, spoke relative to the semi-annual examinations. He took as the basis of his remarks "The end of education is a responsible human being."

The superintendent writes that these meetings will be held regularly once a month.

EDITORIAL NOTES

Home Work for Children

In the development of our educational system the organization of the activities of the pupils in the home is rather behind that found in the best schools. This is partly because of the feeling that it is the school's function to utilize all the time of the pupil not actually needed for recreation, and partly because the modern home, for various reasons, does not always seem to be just the place where children are needed.

Home Work in the Past

The question of home work for pupils rests upon debatable ground. There are parents who expect the school to make the demand, and they are willing so to free the children from other duties that they may meet it. The picture of schoolboys and schoolgirls of other days trudging along from school to home with a load of books indicative of tasks that must be worked out before next day; and from home to school with the same burden, but with problems that have been solved by the fireside — this picture is too vivid in the memory and imagination of most parents for them to realize easily that there may be a good school without such outside preparation.

Less, Not More, Home Work

It would seem, however, as the present movement toward a unification of the interests of the home and school go forward, that the school, directly, will furnish less rather than more home work for the children. If the school properly performs its function of giving the pupil a day filled with educative work, it is difficult to see why it ought still to pursue him into the period that he should have for recreation, or into the hours when he would better be asleep. After a business man has spent a day in his office or store; or, after a farmer has driven his plow or harvested his grain or cultivated his crops during the day, neither the one nor the other feels that he ought to have "home work" of the same kind. Even the well-disciplined professional man knows that his "home work" should

follow some new channels of thought, if he is to recuperate himself properly for the next day, and if he is to endure.

There seems to be no valid objection to applying the same line of argument to the work of the children. In the course of a day, some six hours in length, a pupil will have, perhaps, some work in wood, clay-modeling, cooking, textiles, gymnastics, drawing and painting, with enough of reading, writing, and arithmetic along with it all to keep every moment properly and fully employed. This is legitimate work, and there is plenty of it as long as it lasts. But after school, when the home takes hold, what then? In the past, when school was almost wholly a matter of books, the assignment of home work was easy. So many pages were set off to be read; so many problems in arithmetic to be solved; so many questions in geography to be answered — it was all beautifully definite and very easy.

Homes Not Prepared

But conditions have vastly changed. There is not one home in a thousand that has any provision for enabling the pupil to carry forward any of the hand-work that he is doing in school, even if it be admitted that he should do so. In reading, we no longer use a single book, to be completed in a certain time by taking a fixed amount each day. The reading is from a library of books, large or small, and it is not easy for the home to provide the necessary conditions. In arithmetic the tendency is to solve problems when they arise, and the same principle applies to most of the subjects which used to be considered legitimate for home work. It is generally recognized now, also, that these subjects can be studied with much greater advantage and much more economically in the school, under the immediate direction of the teacher, than elsewhere. Most of the academic work of the pupils that can be done outside of school, therefore, is coming to be of an incidental and general character.

Home Preparation Needed

It must not be inferred, though, that the school no longer demands a preparation for the duties with which it invests the children. It indeed requires a more delicate and refined preparation for work than ever before. This is true because its work is now carefully planned with a deeper appreciation of child character and a truer insight

into the essential things which develop it. The home influence was once considered sufficient if it sent the children to school able to say words and recite formulæ. But everybody knows nowadays that that preparation is of the cheapest kind, in terms of human worth, and that it is the easiest possible to provide. The "home work" of the children that is most valuable to the modern school is not that which can be accomplished mainly by the mouthing of words, or the conning of pages, but rather by means analogous to those which send the merchant back refreshed to his store, the lawyer to his client, the minister to his pulpit, the farmer to his field — all rejoicing in a new day.

What the Home Can Do

That this end may be attained, there are several important things that the home can do by way of preparation. In the first place, it is necessary that the hygienic conditions of the pupils be carefully looked after. Proper food, in right amounts and at proper times; sound sleep, with plenty of outdoor life, will bring a mental rush and enthusiasm to the school that will immensely increase the efficiency of teaching in hundreds of cases. Health, then, first, and above everything else — health! Better a thousand times to be ahead in health and behind in his classes, according to the ordinary standards of estimating academic standing, than for the pupil to be ahead of his grade and behind in health.

Cultivation of Spirit

In the second place, the school has a right to expect that the home shall give the pupil a preparation of spirit. This it cannot do, however, unless the parents are willing to study the school thoughtfully and continuously, that they may in a measure understand its aims and the methods by which it seeks to realize them. There is no more pathetic figure in a schoolroom than a boy or girl who oscillates between a home that is pulling in one direction and a school that is moving in another.

Cultivation of Responsibility

In the next place, as "home work," the school requires that the spirit of responsibility and helpfulness which it seeks to develop be strongly supported by some kind of useful productive activity about the household. The school tries to engender this spirit through its peculiar duties;

the home must do the same. The intellectual and moral leakage of character that takes place after school hours, on Saturdays, Sundays, and holidays, through idleness, is enormous, and for this the home is jointly responsible with the school.

Home Duties of Children

An eighth-grade teacher recently asked her pupils to write out a description of their home duties, and the answers read as though the writers were all the children of widows. Most of these papers showed that the real "home work," to put it mildly, is of an aimless and desultory character, and that it is provided for mainly by the mothers. It is safe to say that if the school were not organized on a sounder basis of industry than such homes, its continued existence could not be insured. The school certainly cannot expect to make much headway in creating feelings of responsibility in six hours, if during the rest of the day the pupils are freed from everything that involves it.

Bad Habits in the Home

The demand of the modern school for this kind of "home work" is difficult to meet, because it strikes at the center of the organization of the home as a social unit. The replies of the pupils, in the case referred to above, show that there is but little chance in many households for the children to participate in actual home-building, and but little attempt to organize systematically the meager opportunities that do exist. As a result, when the pupils come to school they are generally careless, thoughtless, and irresponsible.

Fraternities and Sororities

It is to this lack of a co-ordinating influence on the part of the home, rather than to any adolescent peculiarities, that pupils so easily form themselves into societies of different kinds, which are a feeble attempt to organize their young energies toward some definite end. Psychologists try to account for these on different grounds, but the cold fact is that adolescence is as old as the race itself, while fraternities and sororities at that period are comparatively new, and their history strikingly coincides with the marked changes that are taking place in the homes.

These changes are many and, indeed, of a vital character. Looking at it from the side of the school, the father as a moral force has practically disappeared. As far as his influence upon the school goes, he has become in the home a rudimentary organ, a kind of vermiform appendix, usually passive, but sometimes he becomes stirred into pernicious activity and makes trouble — generally over the long-distance telephone. The much-deprecated exodus of men from the teacher's profession is not to be deplored half so much as the fact that the father as a strong organizing educational force in the family has become as rare as the dodo.

Where Is the Father?

The conditions have changed, too, for the mother. With most of her ancient industries taken from her hands by the great factories of various kinds, she naturally has turned her time to account in other directions. There are few women today who are not more or less involved in some form of public life, the influence of which is not directly of the old home-making type.

The Mother

Other changes, too, of a disintegrating character have taken place. The Lares and Penates of the ancient family life have long since tumbled from their niches by the fireside. The morning and evening prayers that once called the family together around a common altar have passed away, taking out of home life one of the subtlest influences ever felt in the organization of the family. Steeped as they were in superstition, they yet served a mighty purpose. Twice a day the family as a whole came together to voice in common their hopes and aspirations; by moral contact as by touch of elbow they inspired each the other to stand firm in a common cause, and the sorrows of one were softened by the sympathy of all. What matters the quibble whether or not prayers are answered from the Great Beyond! While it existed, this daily moral inventory of the essentials of living, the daily fusing and blending of the individual with the family spirit, whatever else it may have done, in the minds of those who participated, it forever fixed the family as the unit of social life. And the modern household, as yet, has devised

Lack of Co-ordinating Influences

nothing that exactly takes its place. This does not mean, necessarily, that the world has ceased to grow better; we are simply to realize that it is growing to be different from what it used to be.

Type of Home Work Needed

The lack of solidarity in home influence toward the development of feelings of responsibility for definite results having an actual value is the greatest obstacle in the way of the modern school. The new school is as anxious for the pupils to have "home work" as are the parents, but the need is for that of a different type. Home work for the pupils carefully organized by the parents out of the many duties of the common household will do more to increase the efficiency of the schools than all the midnight oil that can be burned in pondering over books. And, on the other hand, a more careful organization of school duties in the light of the home's demands will go a long way toward the nourishment of the family spirit. The proper way to examine a school is to make an inquiry as to the influence of the pupil at home and as to his aspirations as they work themselves out in the family relations. The report cards generally go in the wrong direction; they should be made out by the parents, not by the teachers. The most serious criticism a teacher can get is to have the parent inquire as to his child's progress in school.

In a Nutshell

The best home work for the pupil, therefore, as a preparation for his lessons in school, is that which generates a feeling of responsibility in the family life; in a word, what is needed is the development of an *attitude of mind* that faces toward efficiency and usefulness as naturally and unconsciously as the leaf turns toward the sun. With this as a foundation, the schools can advance to levels of conduct and scholarship that as yet have never been realized.

W. S. J.

BOOK REVIEWS

Young Folks' Library. Third Edition, revised in conference by THOMAS BAILEY ALDRICH, Editor-in-Chief, PRESIDENT WILLIAM JEWETT TUCKER, HAMILTON W. MABIE, HENRY VAN DYKE, NATHAN H. DOLE. Twenty volumes, illustrated. Boston: Hall & Locke Co.; Chicago: Auxiliary Educational League, 540 Fine Arts Building.

This is an era of books and more books. Publishers are no longer content to issue books in singles; they come at one with sets of encyclopedic scope. It is the set of books that needs to be regarded with great suspicion. It is difficult enough to find a single volume that is worth a permanent place in one's library, and a publisher is assuming a good deal when he asks you to make a place for his latest issue; but, *sets of books!* They are apt to be such thin dilutions, such transparent attempts to wring the last cent, such ranting and drivel in gilt and turkey red, that one need not be taken in unless he chooses this way to dispense sweet charity.

But there are sets of books that are different, and the one forming the subject of this review is one of the exceptions. Here is a set of twenty volumes dealing with myth, legend, history, science, poetry, tales of men and beasts — all in accord with an intelligent plan and in the original classic forms in which they were first given to the world. These books, ranging through the fields of literature and science, have been edited by competent men whose names are a guarantee to the worth of the work. The series is so planned as to meet the needs and tastes of readers from the kindergarten stage to the period of maturity. The school or family, therefore, that owns the set possesses a library of comprehensive scope and of classic merit.

Within the compass of a review it is impossible to go into the details of each volume, but a list of the titles with the editors will give at least a fair notion of the scope and grade of the work.

I. *The Story Teller*.....Charles E. Norton
II. *The Merry Maker*.....Joel C. Harris
III. *Famous Fairy Tales*.....Roswell Field
IV. *Tales of Fantasy*.....Tudor Jenks
V. *Myths and Legends*.....Thomas J. Shahan
VI. *The Animal Story Book*.....Ernest Thompson Seton
VII. *School and College Days*.....Kirk Monroe and Mary H. Catherwood
VIII. *Book of Adventure*.....Nathan H. Dole
IX. *Famous Explorers*.....Edwin E. Sparks
X. *Brave Deeds*.....John L. Trowbridge
XI. *Wonders of Earth, Sea, and Sky*.....Edward S. Holden
XII. *Famous Travels*.....George A. Henty
XIII. *Sea Stories*.....Cyrus T. Brady
XIV. *A Book of Natural History*.....David S. Jordan
XV. *Historic Scenes in Fiction*.....Henry Van Dyke

XVI. *Famous Battles by Land and Sea*.....John D. Long
XVII. *Men Who Have Risen*.....Hamilton W. Mabie
XVIII. *Book of Patriotism*.....George F. Hoar
XIX. *Leaders of Men, or History Told in Biography*.....William R. Harper
XX. *Famous Poems*.....Selected by Thomas B. Aldrich

Each volume has about four hundred pages, and contains at the end brief biographical notes of the authors whose writings appear in the volume, and also a well-selected list of books designed for supplementary reading and further study. Accompanying the set is an additional volume called the key. This is a book of reference containing complete indexes, a pronouncing vocabulary, notes on literary sources and on names and places, events, references, and allusions in the different volumes composing the set. This feature is an exceedingly valuable one and greatly enhances the usableness of the work. The series can be recommended without qualification. W. S. JACKMAN.

The Western United States. By HAROLD W. FAIRBANKS. Boston: D. C. Heath & Co. Pp. 302; 135 illustrations.

This is an excellent geographical reader, written by one personally familiar with the western part of our country and interested in educational work. Professor Fairbanks states in his preface that in the preparation of this book he has had in mind the needs of the upper grammar grades. The book may, however, be highly recommended for supplementary reading in connection with high-school courses in physical geography or physiography. The book does not cover "the field of western geography in a systematic manner, but instead . . . . pictures . . . . as graphically as may be, some of its more striking and interesting physical features, and the influence which these features have exerted upon its discovery and settlement." Among the very interesting chapters in the book are the following: "A Trip into the Grand Canyon of the Colorado;" "How the Columbia Plateau Was Made;" "The Canyons of the Sierra Nevada Mountains;" "The Last Volcanic Eruptions in the United States;" "The Mud Volcanoes of the Colorado Desert;" "The Story of Great Salt Lake;" "Death Valley;" "The Pony Express;" "How Climate and Physical Features Influenced the Settlement of the West."

The Frozen North. By EDITH HORTON. Boston: D. C. Heath & Co., 1904. Pp. 157; illustrated.

The secondary title of this work is *An Account of Arctic Exploration for Use in Schools.* The book consists of a series of short sketches, written presumably for children in the upper grades, and furnishing interesting accounts of the explorations into the far North. The famous journeys from the time of Sir John Franklin to those of 1902 are so well told that the reader could not fail to appreciate the main geographic features of the North Frigid Zone, and to know something of the hardships which the pioneers of exploration in that country endured. There are also chapters descriptive of the strange people who inhabit these cold countries — their dress, their ways of living, their customs, and their manners.

A River Journey. By FRANCIS W. PARKER AND NELLIE LATHROP HELM. New York: D. Appleton & Co. Pp. 277; illustrated.

This book is the fourth of the series published under the title of "Uncle Robert's Geography," and edited by the late Francis W. Parker. Uncle Robert takes two of his nephews on an extended geographic field trip to study the Wisconsin River. They secure a small boat at Wausau, Wis., and with a camping outfit start downstream. On the way the boys discover and solve many problems associated with the work of rivers and with the history of the particular valley through which they are passing. The field trip continues to the famous "Dalles" of the Wisconsin River, near Kilbourne City. From the educational standpoint the field trip is well planned and conducted. The account of the journey is given as a narrative and reported through the conversations which were held on the journey. The book will be of value not only in connection with school work, but also for general reading for young people.

W. W. ATWOOD.

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